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3. Sayeed MA, Hussain MZ, Banu A, Rumi MAK, Azad AK. Prevalence of diabetes in a suburban population of Bangladesh Diab Res Clin Prac 1997; 34: 149-155
4. Jarett RJ. Insulin and hypertension (Letter). Lancet 1987; 2: 748- 749
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Editorial

'Journal of Contemporary Dental Sciences' has entered its fifth year with the publication of Volume 5 Issue no.1 in January 2017. We included some changes in the editorial policy as suggested by BM&DC Journal committee.

Dr. Shymal Kumar and his team presented in their paper a comparative study on postoperative drain collection in supraomohyid neck dissection with harmonic scalpel and electrocautery. In his original study paper by Dr. Rafiul Alam Khan has explored the resistant pattern of bacteria to different antibiotics from blood samples of ICU patients of two renowned hospitals. Dr. Sudeshna et al. in their article presented with a 10-years clinicopathological finding of Oral Squamous Cell Carcinoma (OSCC) at Sapporo Dental College and Hospital.

Dr. Bose and Sarker in their cross-sectional study addressing knowledge and awareness regarding AIDS/HIV among villagers have described their findings elaborately. The results are quite outstanding as the villagers were quite knowledgeable about STDs and AIDS/HIV. Dr. Ferdousi in her paper explored the health problems of snake charmer community in rural areas of our Country.

This issue also includes a case report by Dr. Sheikh and his team on the successful use of MTA for repairing perforated floor of molars.

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Contents

A Comparative Study on Postoperative Drain Collection in Supraomohyoid Neck Dissection with Harmonic Scalpel and Electrocautry.

S Kumar[1], S Mondal[2], MA Rahman[3], AKM Faruq[4] AA Imon[5]

Abstract

Background: *The harmonic scalpel is an ultrasonically activated surgical device where high frequency mechanical energy is applied to cut and coagulate the vessels or tissues at low temperature (80°C) where as electrocautery cuts and coagulate the vessels or tissues at high temperature (200°C) leading to carbonization of the neighbouring tissues.* ***Objective:*** *To measure and compare the postoperative neck drain collection on 1st POD and 2nd POD by the use of harmonic scalpel and electrocautery following supraomohyoid neck dissection.* ***Methods:*** *The study was conducted in the Department of Oral and Maxillofacial Surgery, BSMMU ,Dhaka from January 2010 to December 2011. A total of 40 adult patients, 27 male and 13 female, aged 45 to 70 years diagnosed with oral cavity cancer who required supraomohyoid neck dissection (Levels I-III) were evaluated in this prospective study. The patients were stratified into 2 groups, 20 each based on dissecting instrument used, Harmonic Scalpel vs Electrocautery. Preoperative characteristics for all enrolled subjects, including age, sex, location of primary tumour, cancer staging (TNM) were collected at the time of their enrollment. The operation was performed by the same team under general anesthesia with endotracheal intubation. Our standard protocol was used giving submandibular incision and raising subplatysmal skin flap. A closed suction drain was placed at the end of operation. Amount of postoperative neck drain collection on 1st POD and 2nd POD was evaluated and recorded. Data was processed and analyzed using SPSS and was compiled and test of significance was done Chi square test (x^2) and unpaired 't' test.* ***Results:*** *The amount of postoperative neck drain collection after supraomohyoid neck dissection with harmonic scalpel group is significantly less than the electrocautery group. In both the groups $P<0.05$, was statistically significant.* ***Conclusion:*** *Results from the study suggest that the harmonic scalpel is an effective tool for reducing postoperative neck drain collection in supraomohyoid neck dissection for oral cavity cancer.*

Key words: Oral Cancer, Supraomohyoid Neck Dissection (SOND), Harmonic Scalpel (HS) and Electrocautery (EC).

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Introduction

Malignant tumour of oral cavity accounts for approximately 30% of all head and neck cancers and 95% of these are squamous cell carcinoma.[1] Cancer etiology is very complex and is related to the type of carcinogen, its dose, frequency and application, synergistic or additive actions of two or more carcinogens, the susceptibility of the host and most frequently the length of time a carcinogen has interacted with host tissue. Cancer initially grows slowly or do not metastasize and then transform into rapidly growing, invasive and even metastasize. Squamous cell carcinoma of the oral cavity most commonly metastasize to regional lymph nodes through lymphatics and sometimes metastasize through bloodborne routes to the lungs, brain or bone. It is estimated that only 1% of a cancer s metastatic attempts are successful.[2] Oral cancer can arise in the anterior 2/3rd of the tongue, buccal mucosa, upper or lower alveolar ridge (gingival), floor of the mouth, hard palate, retromolar trigone or lip.

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The number of metastatic lymph nodes and the presence of extracapsular spread of the tumor outside the lymph node capsule are additional pathologic staging criteria that further establish a patients risk for regional and distant recurrence and death from disease.[3] Leemans et al[4] reported that because of the lymph node involvement the overall survival rates decreases by approximately 50%; and approximately 40% of patients with oral cancer harbors cervical lymph node metastasis at presentation. The presence of extranodal spread meant a 3 fold increase in the incidence of distance metastasis.

Supraomohyoid neck dissection is a selective, less than comprehensive form of neck dissection which consists of preservation of one or more lymph node groups and all non lymphatic structures where levels I to III lymph nodes are removed. Indications for supraomohyoid neck dissection are, T1-T4 No squamous cell carcinoma of oral cavity Watkinson et al[5] therapeutic neck dissection (the presence of known cervical metastasis), plan for control of primary, no evidence of distant metastasis, reasonable chance of removal of the cervical metastasis and the neck dissection should offer a more certain chance of cure than radiation therapy.[6]

Excision of cervical lymph nodes in oral cancer was first described by George Crile as a radical neck dissection, this approach has undergone various modifications but still suffers from a relatively high morbidity. A total of 40-60% of patients present with surgical complications of differing magnitude, healing disturbances occurred in 61% Magrin et al[7] of which the most frequent were wound infection and dehiscence.

Farwell et al[8] demonstrated that prolonged anesthetic time (>8 hours) was associated with increased postoperative complications. Girod et al[9] evaluated that impact of intraoperative blood loss and demonstrated that perioperative blood transfusion was associated with increased length of stay. The mechanism of the harmonic scalpel is based on transforming electrical energy into mechanical movement of 55.5 kHz frequency with help of piezo-crystalline device.[10] Harmonic scalpel cuts by two mechanism: cavitational fragmentation and mechanical cutting. The mechanism of electrocautery is achieved by introducing current across the physical gap between the source electrode and electrically conductive tissue using an electrode pair, air or water molecules in the gap are dissociated into charge carrying ions, kinetic energy transfer between charge carrying ions and tissue molecules results in heating of intracellular and extracellular fluids and injures tissue cells.[11]

A range of competing surgical techniques is available for head and neck surgery: cold steel, monopolar or bipolar diathermy (electrocautery), coblation, and the and Harmonic Scalpel. Traditionally, cold knife dissection is performed with a combination of scissors and other metal instruments. Bleeding is controlled by applying pressure using temporary packs, then by ligatures; some surgeons use diathermy homeostasis instead of or in addition to ligatures.Diathermy uses radio-frequency energy applied directly to the soft tissues and can be bipolar, where the current passes between the tips of the forceps, or monopolar, where the current passes between the tip of the forceps/blade and plate on the patient s body. The coblator generates a field of plasma or ionized sodium particles that cut the tissue by vaporization. It also acts as a weak bipolar cautery that coagulates small blood vessels.[24]

Harmonic Scalpel has been approved by the United States Food and Drug Administration for the ligation of vessels up to 3 mm in diameter. Amaral et al[12] stated that the ultrasonically activated scalpel produces 1 mm lateral thermal damage where as electrocautery produces 5-10 mm of damaged etected histopathologically and

also reported that the Harmonic scalpel dissecting tool blade can coagulate blood vessels in the 2 mm range without difficulty. The Harmonic scalpel in blunt mode is able to coagulate vessels up to 5mm in a diameter in laboratory tests and has been documented in use on 3mm vessels in clinical settings. The second generation of Harmonic Scalpel (Harmonic ACE) is even more appropriate because it is approved for closing vessels up to 5mm in diameter.[13]

The temperature 1 mm away from the blade is about 40°C and falls to about 6°C at a distance of 2 mm which enables safe dissection of fragile anatomical structures.[14] Kinoshita et al[15] stated that the dissection with the use of harmonic scalpel was safe for anatomical structures 2.5mm away from the blade. Harmonic scalpel generates minimal heat resulting in much lower lateral thermal damage than electrocautery. The lateral zone of injury for harmonic scalpel ranges from 0 to 1000 m whereas for electrocautery ramges from 240 m to 15mm. The advantage of this technique when compared to monopolar electrocautery is that the tissue dissection and vessel occlusion occurs at the same time with reduced thermal damage to surrounding tissue.[16]

Blood loss reduces by five-fold, the operative time shortens and more precise haemostasis can be achieved with harmonic scalpel which in turn reduces the need for blood transfusion. Study done by Marcin et al[17] found that the comprehensive haemostasis during the operation prevents postoperative seroma, this protects the wound from bacterial contamination and provides better conditions for wound healing. Hence, the number of postoperative complications observed in the harmonic scalpel group was four times less than that with electrocautery .

The temperature generated by the Harmonic Scalpel is much lower than that generated in conventional electrocautery; therefore, lateral tissue destruction is much lower using ultrasonic dissection. [20,21]

Interestingly, the Harmonic Scalpel allows a single surgical instrument to be used for tissue dissection, hemostasis, and sectioning of vessels. In another study, postoperative uid collection in drains (due to bleeding and seroma formation)was signi cantly higher .[22]

Methods

The prospective interventional study was conducted in the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, BSMMU, over a period of 24 months from January 2010 to December 2011. The proposed study was presented in front of the Ethical Review Committee, BSMMU and the ethical clearance was achieved. A total of 40 adult patients, 27 male and 13 female, aged 45 to 70 years were included in this study. The patients were stratified into 2 groups, Study Group and Control Group, 20 each based on dissecting instrument used, Harmonic Scalpel (Study Group) and Electrocautery (Control Group).The study group comprised 20 Supraomohyoid neck dissection with Harmonic Scalpel.The control group comprised 20 Supraomohyoid neck dissection with Conventional Monopolar Electrocautery. All the patients who were diagnosed with oral cavity cancer requiring supraomohyoid neck dissection (Levels I to III), fulfilling the basic requirements of inclusion and exclusion criteria were included in the series of this study. Inclution criteria: Oral cavity cancer (T1-T4), clinically negative neck node (N0) and positive node (N1),age range 45-70 years, supraomohyoid neck dissection (Levels I-III), no evidence of distant metastasis and no prior to head and neck surgery. Exclution criteria: Clinically positive neck node (N2-N3), distant metastasis, age below 45 years and above 70 years, beyond Level III neck node involvement, uncontrolled diabetes mellitus uncontrolled hypertension, bleeding disorder, prior head and neck radiation and Patients not showing co-operation with the study.

Diagnosis was made by accurate history, clinical examinations, radiological examinations and histopathological examinations. Preoperative characteristics for all enrolled subjects, including age, sex, location of primary tumour, cancer staging (TNM), histopathological examination were collected at the time of their enrollment. The operation was performed by same team by experienced Oral and Maxillofacial Surgeons under general anaesthesia with endotracheal intubation. After positioning and draping the patients and maintaining the aseptic precautions, standard protocol was followed in our institution by giving submandibular incision, 7 cm long and 2 cm below the lower border of mandible and raising subplatysmal skin flap. In 20 patients supraomohyoid neck dissection was performed by harmonic scalpel and in other 20 patients with monopolar electrocautery. In most of the patients level I to II lymph nodes were removed and in some up to level III lymph nodes were removed and submandibular gland was excised in all patients whereas all non lymphatic structures (sternocleidomastoid muscle, spinal accessory nerve and internal jugular vein) was preserved. Facial vessel was cut and coagulated with harmonic scalpel whereas with monopolar electrocautery it was ligated with 3-0 vicryl. Proper haemostasis was achieved. A closed suction drain was placed in all the patients at the end of the procedure for 48 hours postoperatively and were removed when the drainage was less than 25 ml. The wound was closed using 3-0 vicryl for the muscular fascia and 4-0 prolene for skin. External pressure pack was applied. Postoperative fluid collection in the neck drains (in ml) on; 1st POD and 2nd POD Data were processed and analyzed using SPSS version 16.0 for windows. Both qualitative and quantitative tests were performed. For comparison between groups, Chi square (x2) test was performed for qualitative variables and students t test was performed for quantitative variables. The level of significance was set at 0.05 and $p < 0.0$ considered significant. The summarized data were interpreted accordingly and were then presented in the form of tables, graphs and bar diagrams.

Results

Total of forty patients were included in the series of this study (13 female and 27 male), range from 45 to 70 years. The patient were divided into two groups, Study Group (Harmonic Scalpel Group) included 20 patients and Control Group (Electrocautery Group) also included 20 patients. The mean SD for amount of postoperative neck drain collection after supraomohyoid neck dissection in Study Group (Harmonic Scalpel Group) and Control Group (Electrocautery Group) on 1st POD, was 23.25+5.077ml and 51.75+7.239ml respectively and the P value=0.0002, Since P value is less than the level of significance α=0.05, the result is highly significant (Fig-1). The average postoperative neck drain collection (ml) on 2nd POD is 40.55 ml for the HS group and 94.90 ml for the EC group. Therefore, we can say that the HS is better than the EC method (Fig-2). Table 1 shows that the mean age of the patients was 56.45 years with standard deviation + 7.17 years for Study Group (Harmonic Scalpel Group) and the mean age of the patients was 56.55 years with standard deviation + 7.22 years for Control Group (Electrocautery Group), ranged from 45 to 70 years. Maximum patients were of 60 years age in Study Group and 51-55 and 56-60 years age for Control Group. The difference between the mean age of Study Group and Control Group was statistically significant (p=0.038). Table- 2 shows that The mean SD for amount of postoperative neck drain collection after supraomohyoid neck dissection in Study Group (Harmonic Scalpel Group) and Control Group (Electrocautery Group) on 2nd POD was 40.55+7.591ml

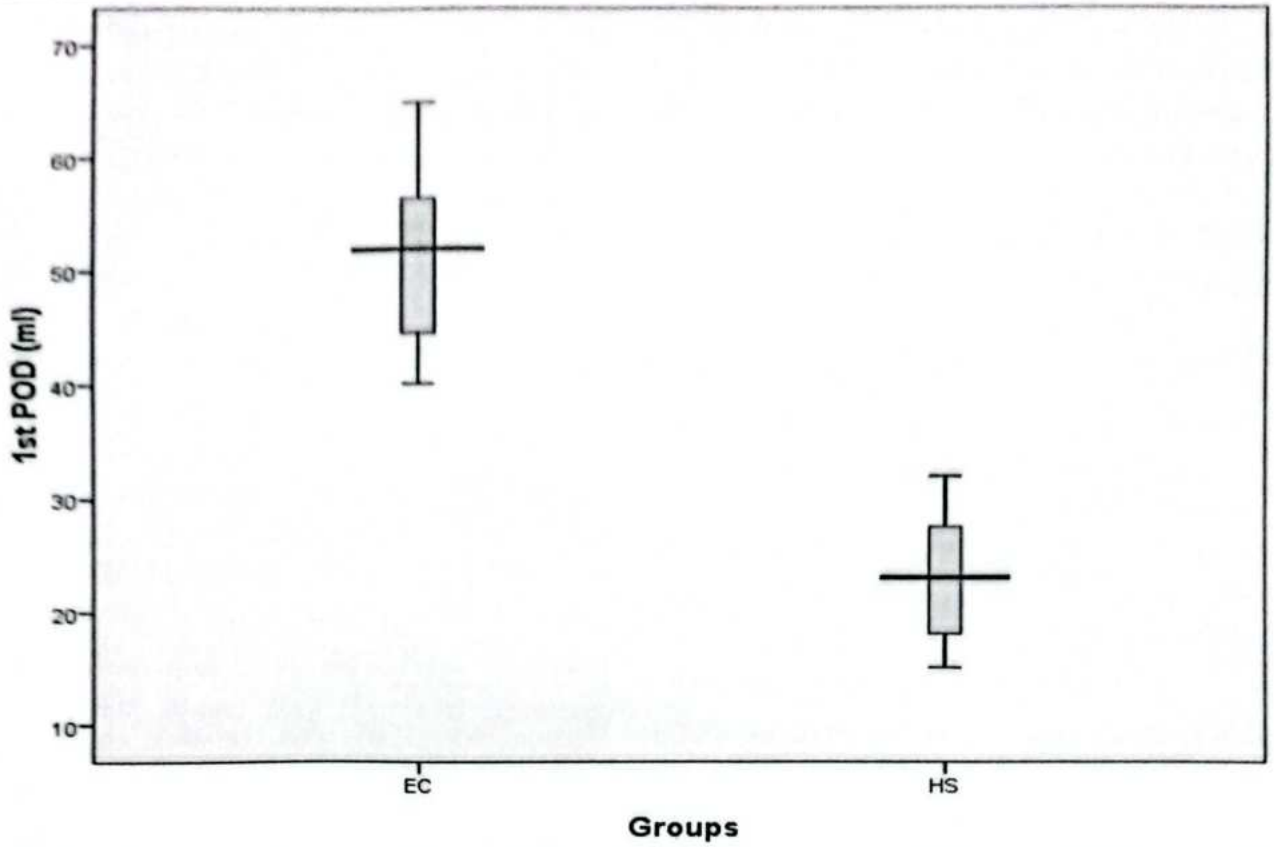

Fig 1: Postoperative neck drain collection (ml) on 1st POD in study group (HS) and control group (EC).

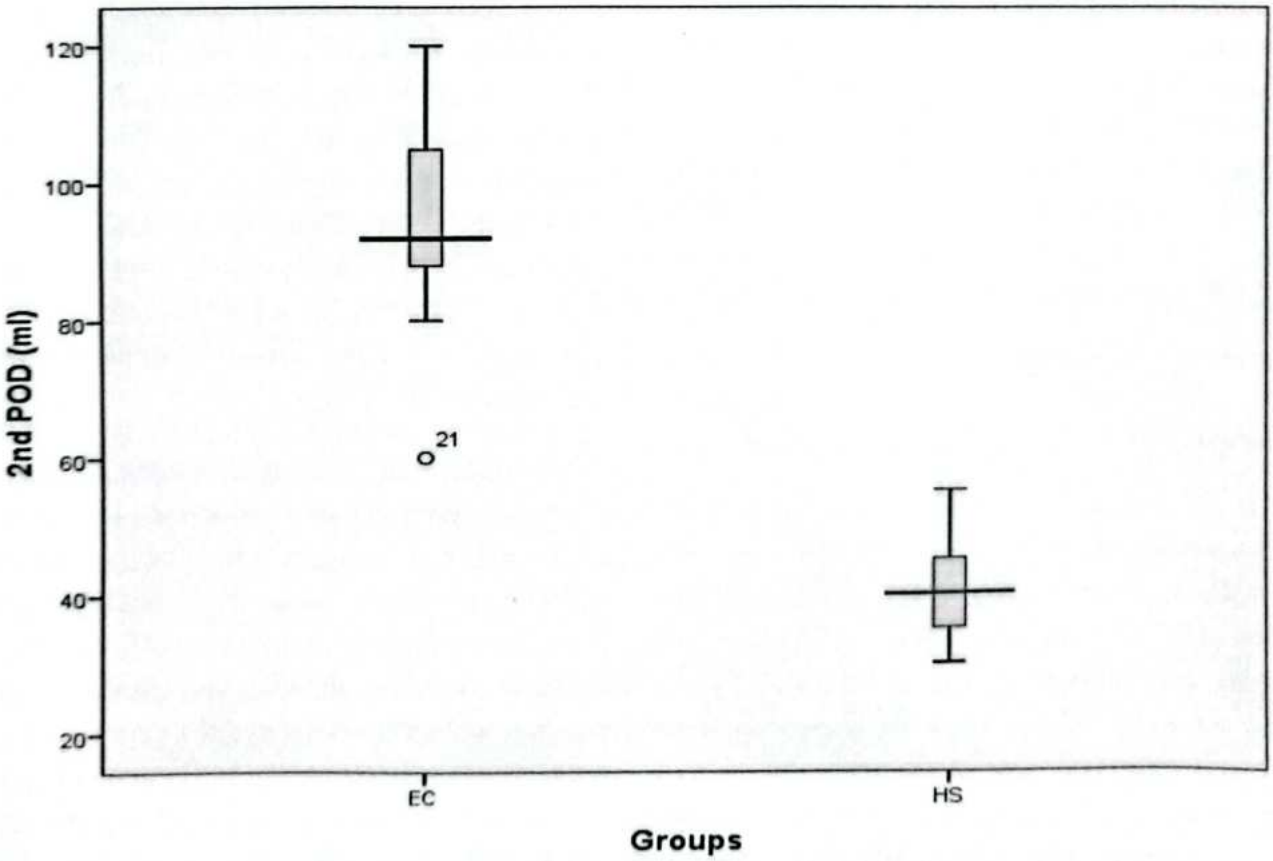

Fig 2: Postoperative neck drain collection (ml) on 2nd POD in study group (HS) and control group (EC)

and 94.90+14.352ml respectively and the P value=0.0001. Since P value is less than the level of significance α=0.05, the result is highly significant.

Table-1: Age distribution of the study group and control group.

Variable	Category In Years	Number of Patients		p value p≤0.05
		Study Group (HS)	Control Group (EC)	
Age	45-50	5/20(25%)	3/20(15%)	0.038
	51-55	4/20(20%)	6/20(30%)	
	56-60	6/20(30%)	5/20(25%)	
	61-65	3/20(15%)	4/20(20%)	
	66-70	2/20(10%)	2/20(10%)	
Mean±SD		56.45±7.17	56.55±7.22	
Range (min-max)	(45-70)			

Table-2: Difference in Amount of Neck Drain Collection in Study Group and Control Group with Period of Evaluation on 1st POD and 2nd POD

Postoperative Neck Drain Collection	Study Group (HS) (n=20)	Control Group (EC) (n=20)	t value	df	Mean Difference	Std. Error Difference	p-value P≤0.05
Period Of Evaluation	Mean±SD (ml)	Mean±SD (ml)					
1st POD	23.25±5.077	51.75±7.239	-14.415	38	28.50	1.977	0.0002^{S}
2nd POD	40.55±7.591	94.90±14.352	-14.970	38	54.35	3.631	0.0002^{S}

Discussion

Oral cavity cancer incidence in developing countries has the highest rates for both males and females in South Karachi (Pakistan). In Asia, the second highestrates are observed among both males and females in India, followed by the Philippines for women.The habit of chewing areca nut and tobacco constitute the main risk factors, which are very common in South Central and South Eastern Asia and in other countries of Pacific and Micronesia countries, such as Lanka,Bangladesh, Cambodia, Mala Indonesia, China, PapuaNew Guinea Thailand.[20]

Meticulous dissection and exhaustive haemos are important to ensure a dry field and to a inadvertent damage to the adjacent structures complex anatomy of the head and neck and neural and vascular structures encountered du head and neck surgery, a haemostatic dissec instrument that generate a minimum of heat significant benefit. Technological developmen surgical practice have introduced the use of a variety of energy sources for tissue dissect There are several proposed techniques to t metastatic head and neck cancer that invol preserving important anatomical structures in neck. New operative techniques based on mod technology improves several negat consequences of the surgery thus to improve ea patient recovery, reduce operating time a intraoperative blood los and decrease flu collection in the neck rains, one promisi surgical tool that has en proposed is t Harmonic Scalpel. Har nic scalpel facilita identification of anat nical structures maintaining a clean dry o rative field and allo dissection adjacent to se structures with minimum of risk n compared w electrocautery.[18]

Blood transfusion, prolo d operating time excessive neck drain llection are clea associated with advers utcomes in patie undergoing major he and neck surg procedures. Strategies reduce bleeding therefore worth investiga and our study sh that the harmonic scalpe gnificantly reduce neck drain collection patients underg supraomohyoid neck dissection for oral ca cancer.

The study was carried out to evaluate whether harmonic scalpel method has any significant advantage over the more commonly practiced method electrocautery in supraomohyoid neck dissection. Koh et al[19] reported that prevention of unwanted intraoperative bleeding is important in supraomohyoid neck dissection because bleeding causes confusion of the anatomic and surgical planes. Furthermore bleeding causes operative time to lengthen inappropriately and necessitates the use of drains.

Use of the HS resulted in a signi cant reduction in the operation time, as previously reported for other surgery. We believe this result arises from the ability of the HS to simultaneously cut tissue and coagulate, allowing an optimal view in a bloodless operative eld. These features facilitate the use of the HS in tight spaces or near vital structures, where precision is essential. The handling of the ultrasonic scalpel does not require special skills from the surgeon, since it only substitutes the conventional electronic scalpel.[25]

Marcin et al[17] reported that the operation time (mean+SD) using harmonic scalpel was significantly shorter (52+10 min) then conventional electrocautery (86+22 min), p<0.01, the intraoperative blood loss with harmonic scalpel was (13+7 ml) was considerably less than with electrocautery (85+58 ml), p<0.01 and the quantity of neck drainage on 1st POD and 2nd POD with harmonic scalpel was (30+26 ml and 44+23 ml) respectively whereas with electrocautery was (77+65 ml and 118+66 ml) respectively, p<0.01 whereas our study showed that the operation time (mean+SD) using harmonic scalpel was (39.35+4.945min) and with conventional electrocautery (83.45+6.809min), p<0.01, the intraoperative blood loss with harmonic scalpel was (19.60+4.135ml) and with electrocautery (74.00+12.645ml), p<0.01 and the quantity of neck drainage on 1st POD and 2nd POD with harmonic scalpel was (23.25+5.077ml and 40.55+7.591ml) respectively whereas with electrocautery was (51.75+7.239ml and 94.90+14.352ml) respectively, p<0.01. The results are consistent with the results of other studies.[23,24] Hence, when supraomohyoid neck dissection was performed, the operative time, intraoperative blood loss and postoperative neck drain collection was reduced in harmonic scalpel groups.

The comprehensive hemostasis during the operation also prevents postoperative seroma. The amount of uid drained from the neck was considerably less in the study group, especially in the rst two postoperative days. This protects the wound from bacterial contamination and provides better conditions for wound healing.

The simultaneous coagulation and cutting of vessels and tissue without the need to change instruments is most likely the primary reason for significant decrease in operative time, intraoperative blood loss and amount of neck drain collection with harmonic scalpel group than with electrocautery group. Finally, the relatively low temperature generated by the harmonic scalpel and the subsequently low level of thermal energy transferred to the adjacent tissues avoids the necrosis of the surgical margins and therefore potentially limits the risk of wound complications.

Conclusion

Results from the study suggest that the harmonic scalpel is an effective tool for reducing postoperative neck drain collection during supra-omohyoid neck dissection for oral cavity cancer. The estimation of blood loss for surgical procedure is both poorly reproducible and typically underestimated. Attempts to carefully measure blood loss by weighting of gauzes are complicated by evaporation and loss of blood on the operating field. Therefore, comparison of postoperative haemorrhage from one institution

to another or from one surgeon to another can vary. The ultrasonic dissector is a comfortable instrument to use. Ergonomically, there is an obvious advantage to using 1 instrument for both dissection and hemostasis. This study had shown that episodes of postoperative haemorrhage were minimal with harmonic scalpel, which allows cauterization and sealing of vessels during the surgical procedure. Furthermore, bleeding causes operative time to lengthen and more postoperative drain collection.

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Antimicrobial resistant pattern of bacteria isolated from blood samples of ICU patients

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Abstract

Hospital acquired infection is an endemic problem encountered in hospital patients all over the world including Bangladesh. The present study was carried out in 60 patients who were admitted in ICU of BSMMU & DMCH from February 2016 to December 2016. The objective of this study was to find out the common pathogens in ICU patients & their antibiotic resistant pattern. Blood samples were collected from 60 patients. Among the studied cases, pathogens were isolated from 27 blood samples. Out of 27culture positive cases most common organism was Pseudomonas aeroginosa 09(33.33%) & it showed resistance to Piperacillin (75%), Ciprofloxacin (60%) & Imipenem(40%).

Keywords: ICU, Resistance, Antibiotic **(J Cont Dent Sci 2017;5(1):9-13)**

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Introduction

Intensive care unit is a specially staffed & equipped hospital ward dedicated to the management of patients with life threatening illness, injuries or complications (Maliha et al, 2002).[1]

Patients are admitted into hospital Intensive Care Unit (ICU) ward suffering from respiratory insufficiency, haemodynamic insufficiency, coma, severe head trauma, after major surgery, life threatening acute illness, severe fluid imbalance & failure of one or more of the major organ system (Halpen, 2004).[2]

The ICU patients are 5-10 times more likely to develop infection than those in patients on general wards (Fagon et al, 1996).[3]

Patients getting admission in ICU are severely ill, get exposure to multiple invasive devices and remain in close contact with health care personnel. With longer ICU stays and space limitations increase the risk of contaminating equipment. Low resistance of patients to infection & drug resistance of endemic microbes also influence the frequency & nature of infection in ICU (Floros et al, 2001).[4]

The major sites of infection in the ICU are the respiratory system (34%), wound (24%), urinary tract (18%) & blood stream (11%) (Eltahawy, 1997)[5]

Intravascular devices provide access to the vascular system for administration of fluids & drugs & for the haemodynamic monitoring. These devices bypass skin defences, thus becaming direct portal of entry of microorganisms into the blood (Pittet et al, 1994).[6]

Bacterial infection in ICU patient is an alarming problem throughout the world. The present study has been designed for the isolation and identification of resistant pattern of bacteria of ICU patient. The aims and objectives of the study were to-

To isolate & identify bacteria from ICU patients

To find out the antibiotic resistant pattern of isolated bacteria.

Materials & Methods

The clinical specimens for this study were collected from ICU patient of BSMMU hospital & Dhaka Medical College Hospital (DMCH) from February, 2016 to December, 2016. ICU patients

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of both sexes & different age groups were considered for evaluation & a total of 60 patients were studied. Out of 60 patients, 60 blood samples were collected for isolation of the bacteria. All laboratory procedures were done in the department of Microbiology & Immunology of BSMMU, Shahbag, Dhaka.

Methods of sample collection

Blood sample

Verbal consent was taken from the patient or from their attendant before collection of blood sample. A single sample of venous blood preferably anticubital vein was collected from each patient with sterile disposable syringe & needle after disinfection of the selected venepuncture site with povidone-iodine (Povisep). Five (5) ml of blood from each patient was collected from single venepuncture. After removing the needle from venepuncture site the sampling needle was discarded & replaced by a fresh sterile needle. The top of the rubber stoppers of the blood culture receptacle was disinfected with 70% alcohol & 5 ml of collected blood introduced into conventional blood culture broth bottle containing 50 ml of trypticase soy broth at the bed site. The culture broth was agitated gently to mix the blood with broth. All the blood culture bottles were transported immediately to the laboratory for further processing (Collee & Marr, 1996).[7]

Laboratory methods

Blood sample: Blood culture bottle containing trypticase soy broth inoculated with blood & incubated at 37°C aerobically. The bottles were observed visually for growth (turbidity) after overnight incubation & once daily thereafter. Observation for any suspected growth (turbidity) was done after 24 hours, 48 hours & 7 days (Collee & Marr, 1996).[7]

For subculture, the blood culture bottles were agitated gently to mix the blood with the broth & the top of the rubber stoppers of the blood culture bo disinfected with 70% alcohol. Blood was dra from culture bottle with sterile disposable syring needle & a drop of blood was added on the bl agar, chocolate agar & Mac Conkeys ag respectively. After drying up, the drops of the bl were inoculated in the different media with ste wire loop. Mac Conkeys agar were inoculated 37°C, blood agar & chocolate agar inoculated at 5 CO_2 (candle extinction jar) at 37°C. All plates we examined after overnight inoculation & discarde after 48 hours if no growth occurs. Identification the organisms was done by 1) colony morpholo 2) Gram staining & 3) necessary biochemical tests.

Identification of organism

Gram negative organisms were identified by colo morphology, Gram staining, motility tes fermentation of different sugar media, indol production, methyl red reaction, citrate utilizatio urease production & H_2S production in KIA media. Gram positive organisms were identified by colo morphology, Gram staining, haemolytic proper catalase test & coagulase test.

Antimicrobial susceptibility test

All the bacteria isolated were tested for antimicrobial susceptibility against Nitrofurantoin(NF), Cotrimoxazole(Co), Erythromycin(E), Cloxacillin(CX), Gentamycin(G), Ciprofloxacin(C P), Ceftazidime(CAZ), Nalidexic ac (NA), Aztreonam(AO), Imipenem(I), I eracillin(PC), Carbenicillin(PY), Netilmycin(N T), Ampicillin(A Tetracycline(T). Commercially ilable discs were used.

Media used

Muller-Hinton agar was prepar from a dehydrat base accoding to the manufactu ecommendation

Reading of sensitivity test result: After overnight incubation at 37°C the plates were examined & the diameter of complete zone of inhibition were measured in millimeter with the help of a ruler placed on the under surface of the petridish. The zone of inhibition was measured in two direction at right angle to each other through the centre of the discs & the averages of the two readings were taken.

Results

A total of 60 ICU patients of BSMMU & DMCH having suspected hospital acquired infection were studied. Blood samples were collected from each ICU patients for isolation of bacteria.

Table 1: Number of culture positive cases in blood samples of study patients in ICU patients

Name of samples	BSMMU		DMCH		Total culture positive
	No. of sample	culture positive	No. of sample	culture positive	
Blood (n=60)	30	12(40)	30	15(50)	27(45)

Note: Parenthesis indicates percentage.

Table 2: Types of organism isolated from 27 culture positive cases of ICU patients

Name of the bacteria	BSMMU(n=12)	DMCH (n=15)	Total (n=27)
Pseudomonas aeroginosa	04(33.34)	05(33.33)	09(33.33)
Klebsiellapneumoniae	02(16.67)	03(20)	05(18.52)
Escherichia coli	02(16.67)	02(13.33)	04(14.81)
Staph.aureus	01(8.33)	02(13.33))	03(11.11)
Coagulase negative Staph.	01(8.34)	01(6.67)	02(7.41)
Acinetobacter spp.	01(8.33)	01(6.67)	02(7.41)
Aeromonas spp.	01(8.33)	01(6.67)	02(7.41)

Table 3: Antimicrobial drugs resistant pattern of bacteria isolated from blood samples in BSMMU & DMCH.

Name of the organism	Hospital	Ampicillin	Cotrimoxazole	Tetracycline	Erythromycin	Cloxacillin	Gentamycin	Ciprofloxacin	Ceftriaxone	Imipenem	Aztreonam	Ceftazidime	Netelmycin	Carbanicillin	Piperacillin
Pseudomonas spp.	BSMMU (n=4)	-	-	-	-	-	2(50)	2 (50)	2(50)	1(25)	1(25)	2 (50)	1(25)	2(50)	3(75)
	DMCH (n=5)	-	-	-	-	-	3(60)	3(60)	3(60)	2(40)	2(40)	3(60)	1(20)	3(60)	4(80)
Klebsiella spp.	BSMMU (n=2)	2(100)	2(100)	2(100)	2(100)	2(100)	0(0)	0(0)	0(0)	_	_	1(50)	_	_	_
	DMCH (n=3)	3(100)	3(100)	3(100)	3(100)	3(100)	0(0)	0(0)	0(0)	_	_	1(50)	_	_	_
E.coli	BSMMU (n=2)	2(100)	2(100)	2(100)	2(100)	2(100)	0(0)	0(0)	0(0)	_	_	0(0)	_	_	_
	DMCH (n=2)	2(100)	2(100)	2(100)	2(100)	2(100)	0(0)	0(0)	0(0)	_	_	1(50)	_	_	_
Staph.aureus .	BSMMU (n=1)	1(100)	1(100)	1(100)	1(100)	0(0)	0(0)	0(0)	0(0)	_	_	0(0)	_	_	_
	DMCH (n=2)	2 (100)	2 (100)	2 (100)	2 (100)	0(0)	0(0)	0(0)	0(0)	_	_	1(50)	_	_	_
Coagulase negative Staph.	BSMMU (n=1)	1(100)	1(100)	1(100)	1(100)	_	0(0)	0(0)	0(0)	0(0)	_	0(0)	_	_	_
	DMCH (n=1)	1(100)	1(100)	1(100)	1(100)	_	0(0)	0(0)	0(0)	0(0)	_	0(0)	_	_	_
Acinetobacter spp.	BSMMU (n=1)	1(100)	1(100)	1(100)	1(100)	_	0(0)	0(0)	0(0)	0(0)	_	0(0)	_	_	_
	DMCH (n=1)	1(100)	1(100)	1(100)	1(100)	_	0(0)	0(0)	0(0)	0(0)	_	0(0)	_	_	_

Table-1 shows A total of 60 ICU patients, of which 30 blood samples collected from BSMMU & 30 blood samples from DMCH. The rate of culture positivity of blood samples were 12(40%) in BSMMU & the rate of culture positivity of blood samples were 15(50%) in DMCH.

Table-2 shows among 27 culture positive cases in BSMMU & DMCH, highest number 09(33.33%) isolates were Pseudomonas aeroginosa followed by Klebsiella pneumoniae 05 (18.52%), E.coli 04 (14.81%) & Staphylococci aureus 03 (11.11%).

Table-3 depicts resistant pattern of pseudomonas aeroginosa isolates of BSMMU & DMCH, resistant to piperacillin (75%-80%), resistant to gentamycin, ciprofloxacin, ceftriaxone, ceftazidime & carbanicillin (50%-60%), resistant to imipenem, aztreonam, netilmycin (25%-40%).

Discussion

Sick or injured people who need very close monitoring are taken care in an area of the hospital called Intensive care unit (ICU).Generally people in the ICU has had a life threatening illness or condition. Bacterial evaluation & emergence of antimicrobial drug resistance continue to interfere with the successful treatment of infections by both community & hospital based physicians. Resistance had emerged to even newer most potent antimicrobial agent (Parry,1989).[8] Hospital acquired infections are one of the main causes of morbidity & mortality in the hospitalized patients at the present time (Wenzel, 1981).[9] Advances in biomedical technology & therapeutics are producing greater number of highly susceptible patients requiring treatment in hospital & this is aggravated by the occurrence of transferable resistance to antibiotics in pathogenic bacteria & emergence of new pathogens transmitted by a variety of routes (Mendel et al,1995).[10] In this study, an attempt has been made to get an insight regarding the identification & isolation of causative organisms responsible for infect... ICU patients of BSMMU & DMCH... antibiogram pattern of the offending organ... ICU environment was also investigated. A to... 60 ICU patients of which 60 blood sam... collected from BSMMU & DMCH were stud...

The present study found culture positivity of b... samples in 27(45%) patients.

The most common organisms isolated f... BSMMU & DMCH were Pseudomon... aeroginosa 09 (33.33%) followed by Kleb... pneumoniae 05 (18.52%), E.coli 04 (14.8... Staphylococci aureus 03 (11.11%). Coagul... negative Staph. 02 (7.41%), Acinetobacter spp. ... (7.41%) & Aeromonas spp. 02 (7.41%) .

In the current study Pseudomonas aeroginosa w... the predominating organism of both BSMMU ... (33.33%) & DMCH 05 (33.33%) followed b... Klebsiella pneumoniae 02 (16.67%) & 03 (20... E.coli 02 (16.67%) & 02 (13.33%), Staph.aure... 01 (8.33%) & 02 (13.33%) & Coagulase negat... Staph. 01 (8.33%) & 01 (6.77%) respectively.

Our study detected resistant pattern ... Pseudomonas aeroginosa isolates of BSMMU ... DMCH, were resistant to Pipe...cillin (75%-80... Gentamycin, carbanicilli... ciprofloxaci... ceftazidime & Ceftriaxone ...%-70%) & als... resistant to imipenem, astre...m & netilmyc... (25%-40%). In Klebsiella ...umoniae, E.co... Staph. Aureus, Coagulas... negative Staph... Acinetobacter spp. & Aerom... spp. were fou... 100% resistant to ampicill... Cotrimoxazol... Tetracycline & Erythromycin

Conclusion & Recommenda...

From the present study it cou...e concluded th... in blood samples Pseudomona... aeroginosa was th... most common organism & ...stly resistant t... Gentamycin, Ciprofloxacin & Ceftriaxo... (50%-60%) & Imipenem (25%-40%).

From the present study the following recommendation were made:

a) Indiscriminate use of antimicrobial drug should be avoided.

b) Identification of the bacteria should include the use of kits for rapid group specific antisera & polymerase chain reaction (PCR).

c) Studies should include isolation of other causative agents like anaerobic bacteria, viruses, fungi & protozoa.

d) Sources of hospital acquired infections in ICU patients should be detected.

e) Specific genes responsible for multidrug resistance should be detected by DNA probe.

f) Proper monitoring of infection control team.

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A 10 years institutional experience of oral squamous cell carcinoma: a histopathological study

SPD Gupta[1], MM Hossain[2], Z Mahmud[2], A Zaman[3]

Abstract

Objectives: *Squamous cell carcinoma is the most common malignant neoplasm of the oral cavity. This study aimed to see histopathological review of oral squamous cell carcinoma (OSCC) and to analyze it in respect to sex and site.* ***Materials and Methods:*** *A total of 291 cases of OSCC during 10 years period from 2007-2016 were collected from the files of the Department of Oral Pathology, Sapporo Dental College and Hospital, Dhaka, Bangladesh. The demographic data, site of lesion and histopathological gradings were analyzed.* ***Result:*** *Among the 291 cases of OSCC 148 (50.85%) were males and 143 (49.15%) were females. There is no difference in incidence of male and female. At diagnosis age ranging from 10-80 yrs. It is more common in 5th -6th decade 94 (32.35%). Most common site is buccal mucosa (57.39%) followed by tongue (12.71%), retromolar area (9.97%) and other areas (19.93%). Histological grading revealed 254 (87.28%) well-differentiated, 27 (9.28%) moderately differentiated and 10 (3.44%) poorly differentiated OSCC cases respectively. Grading was done according WHO grading system(2017).* ***Conclusion:*** *Histologically most common OSCC is well-differentiated and it is tobacco related and mostly occurs in the buccal mucosa.*

Keywords: ***Oral Squamous Cell Carcinoma (OSCC), Histological grading. (J Cont Dent Sci 2017;5(1):14-***

Introduction

Oral squamous cell carcinoma is the 6th most common malignant epithelial neoplasm of the oral cavity and it represents more than 90% of all oral malignancies.[1-2] The incidence of oral sqamous cell carcinomas (OSCCs) varies in different parts of the world and this difference is largely attributed to the exposure to risk factors specific to the area.[3] The highest incidence and prevalence of oral sqamous cell carcinoma is found in the Indian subcontinent where the risk of developing oral SCC is increased by the very prevalent habits of chewing tobacco, betel quid and areca-nut.[4] However now-a-days it is also thought that SCC is a result of a multistep process involving genetic mutations and chromosomal abnormalities.[5,6] This study was aimed to conduct a histo-pathological review of oral squamous cell carcinoma and analyze it in respect to age, sex, and site.

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Materials and Methods

A total 291 histologically diagnosed cases of oral squamous cell carcinoma, during 10years period from 2007-2016 were retrieved from the archive of the department of oral pathology, Sapporo dental college, Dhaka, Bangladesh. Patients demographic, clinical and histo-pathological parameters were analyzed and the findings were documented. The 5µm thick haematoxylin and eosin (HE) stained sections were reviewed under light microscope to confirm the diagnosis of cases.

Results

Table 1: Distribution of age and gender in squamous cell carcinoma (n=291)

Age Group	No. of Patients	Gender	
		M	Female
<20 years	01 (0.3%)	01 (0	0 (0%)
20-29 years	03 (10%)	01 (0	01 (0.7%)
30-39 years	21 (07%)	12 (0	09 (06%)
40-49 years	72 (24.7%)	35 (2	37 (26%)
50-59 years	78 (27%)	40 (2	39 (27%)
60-69 years	84 (29%)	41 (2	43 (30%)
70-79 years	23 (08%)	14 (9	09 (6.3%)
>80 years	09 (03%)	04 (2	05 (04%)
Total	291(100%)	148 (1	143 (100%)

Out of the 291 diagnosed OSCC cases, 148 were male (51%) and 143 were female (49%) (Table 1 and Figure1). Among the patients age ranging between < 20 years and > 80 years, twenty-nine percent (29%) belonged to 60-69 years age group, while 27% belonged to 50-59 years and 24.7% belonged to 40-49 years age group respectively(Table 1).

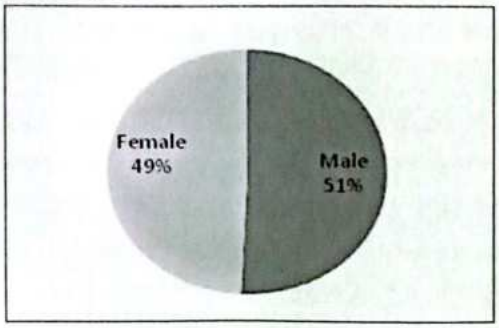

Figure 1: Total percentage of male and female in SCC patients (n=291)

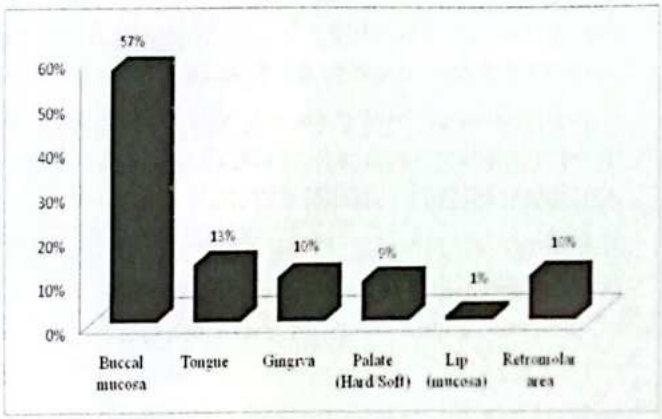

Figure 2: Distribution of different sites of SCC (n=291)

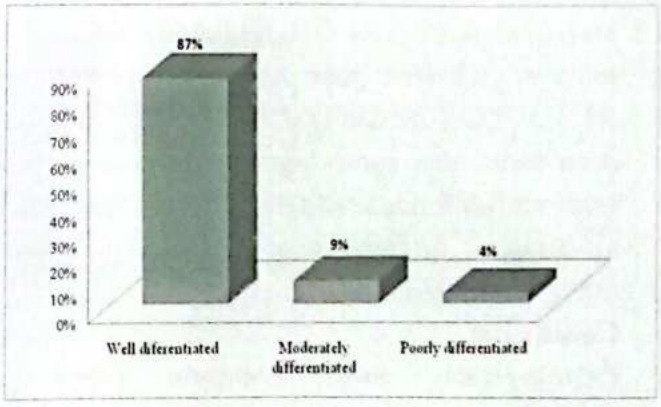

Figure 3: Histological grading of SCC (n=291)

Figure 4: Squamous cell carcinoma in buccal mucosa.

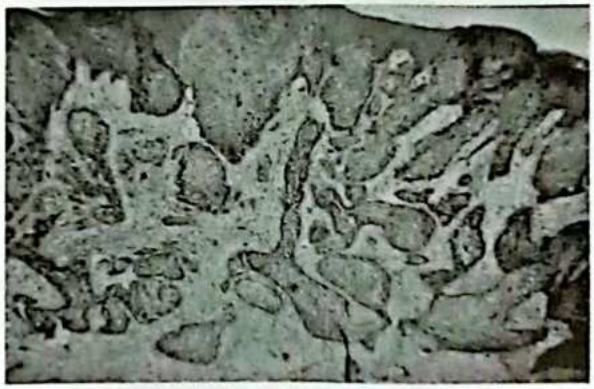

Figure 5: Squamous cell carcinoma, well differentiated.

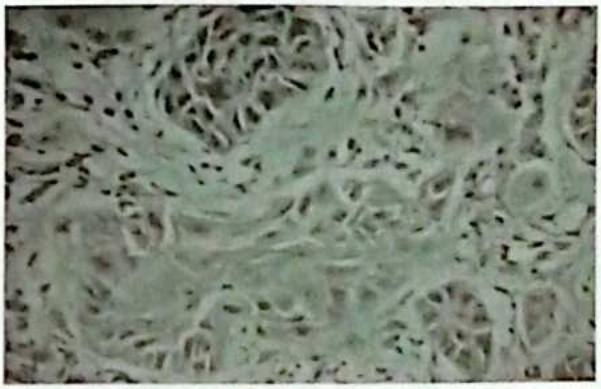

Figure 6: Squamous cell carcinoma, moderately differentiated.

Figure 7: Squamous cell carcinoma, poorly differentiated

The most common site for OSCC was buccal mucosa (57%), followed by tongue (13%), gingiva (10%), retromolar area (10%), palate (9%), and lip (1%). (Figure 2&4). According to Histopathological grading, Eighty-seven (87%) had well differentiated OSCC, followed by 9% moderately differentiated and 4% poorly differentiated oral squamous cell carcinoma (Figure 3, 5, 6 & 7).

Discussion

Oral squamous cell carcinoma is one of the most common malignant tumour occurring in Bangladesh. In the present study clinical and macroscopical features of OSCC were evaluated. From 2007 to 2016 years, total 291 cases of OSCC were retrieved from the archives of the Department of Oral Pathology, Sapporo Dental College and Hospital, Dhaka. Among them OSCC more commonly occur in 40-69 years of age. There were approximately 234 patients (80.7%) in this age group. A study over 216 confirmed cases of OSCC by SS Rahman et al8 from Bangladesh reported that, the most common age of presentation of the disease was in the 5th decade of life. A study by Krishna et al[9] in the Indian subcontinent reported that approximately 75% of the patients with OSCC in a North Indian population were aged between 40 and 60 years. Another study in Southern Taiwan, conducted over 703 patients, by Y.K Chen et al[10] reported the mean age of the patients was 52. Fabio Ramoa Pires et al[11], in Southeastern Brazil conducted a study over 346 OSCC patients and reported the mean age of the patients was 62.3 years old.

In our study, there is no difference in the incidence of male and female (1.04:1). SS Rahman et al[8] from Khulna, Bangladesh reported in a study that, the male and female ratio was 1.5:1. In another study by Jainkittivong A et al[12] over 342 Thai patients, it was shown that the male to female ratio was 1:1 and the incidence increased with age. However, in Southern Taiwan, Y.K Chen reported an overwhelming male predom (male: female = 15:1).

We found in our study that common site occurrence of OSCC is buccal mucosa in cases (57%), followed by tongue in 37 (13%), retro-molar area in 29 cases (10%), other areas in 58 cases (20%). In his study Rahman et al[8] observed mandibular alv (48.61%) is the most frequently involved followed by buccal mucosa (21.30%). Meh et al[13] observed that the tongue is the comm affected site in a sample of 1,151 patients oral cancer in Allahabad, Uttar Pradesh, India the other hand, Krishna et al[9] from North In found buccal mucosa as the predominan involved site. However in western count OSCC affects the tongue in 20%-40% of cases a the floor of the mouth in 15%-20% of cases14,15. In the study by Y.K Chen et al[10], fro 703 patients of Southern Taiwan shows that, t most common site of OSCC was the buc mucosa with 263 patients (37.4%).

Histological grading is an important diagnos tool to predict the clinical and biological behav of cancer. In our study of 291 cases, 254 patie (87%) are well-differentiated, 27 patients (9%) moderately differentiated and 10 patients (4%) poorly differentiated. Study conducted by Rahman at el[8] reported over 216 confirmed ca of OSCC that, majority of patients (70.7% presented with well-differentiated OSCC. In study of 342 Thai patients majority of the ca are well-differentiated OSCC (78.6%).[12] In a stu from India also show highest numbers of ca were well-differentiated OSCC (76%) followed moderately differentiated (21%) and poo differentiated (3%).[16]

Conclusion

Histologically most common OSCC well-differentiated and it is age related and mos occurs in the buccal mucosa.

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Health problems among the snake charmers of a selected rural area in Bangla

S Ferdousi[1], N Rifat[2]

Abstract

Objectives: *This descriptive cross sectional study was carried out to assess the health problems among the sn charmers from the Bokhterpur village of saver.* ***Methods:*** *A total 150 snake charmers age ranging between 1 years were selected and necessary information was collected by direct interviewing with semi-structu questionnaire..* ***Results:*** *Among the total of 150 respondents 50.7% were female, 36.7% had primary l education and 24% were illiterate. Majority of the respondent's occupation was to catch snake (31.3%) a singing (26.7%). Among the respondents 62.7% were suffering from different kinds of diseases and 48.7% went hospital for treatment.* ***Conclusion:*** *It was concluded that their health seeking behavior was satisfactory. Wh they are sick or any injury occurred they visited a nearby hospital, often went to a doctor. In many instances th could not afford to go to doctor or hospital due to financial insufficiencies.*

Key words: Snake charmers, Health problem, Rural Area ***(J Cont Dent Sci 2017;5(1):18-2***

Introduction

Snake charming refers to the practice of hypnotizing a snake by playing instrument. The practice occurs most commonly in India. Pakistan, Bangladesh, Srilanka, Thailand and Malaysia also harbor performers as well as the North African countries of Egypt, Morocco and Tunisia. Anthropologist HKS Arefen mentioned Bede or Snake charmer as a marginalized Muslim Community in Bangladesh perspective.[1] They are engaged in the snake charming, catering of snake, curing snake-bite, selling of snakes, traditional and spiritual healing services, magic show and selling trinkets. Around 10,000 nomadic groups roam around Bangladesh round the year and they gather for two months in an area.[2] A survey reported about 65 prominent areas were snake charmers come for yearly gathering and some of the Bedeys have purchased land to settle in those places.[3] According to the recent estimate bedeys ar 500000 in number in Bangladesh.[4] Thei community is severely deprived from all types o basic necessities of life like food, shelter, education, medical care etc. Lack of awarenes and health education increases the risk of disease. Though many researches worked on the culture and education of the snake charmer communit, no research was done regarding h lth problems of this community. Realizing the n ed to conduct an exploratory research among th snake charmers the current study focused o health related problems of this community.

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Materials and Methods

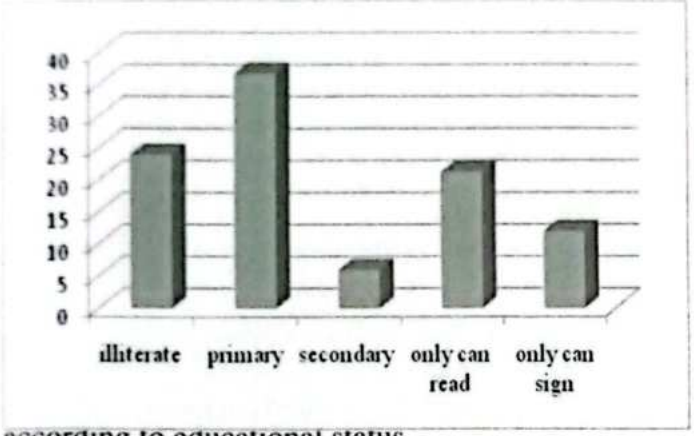
This was a cross sectional scriptive study carried out at Bokhterpur vill : Savar Thana Dhaka Zilla, from April to Ju 2010. A total number of 150 snake charme were selected randomly by direct intervie ng with semi structured questionnaire a practiced in Community Medicine. All he necessary information was collected kee g in view the variables. All the collected dat vere organized and analyzed by using statisti l package for social services (SPSS). All the qualitative data were expressed in frequency and parentage (%).

Results

Table 1: Distribution of the respondents by age

Age group	Frequency	Percent
<20 years	45	30.0
21-30 years	52	34.7
31-40 years	27	18.0
41-50 years	16	10.6
>50 years	10	6.7
Total	150	100.0
Mean = 29.51; SD = 11.941, Range: 14-63Yrs		

Table 1 shows the age range of the study subjects (n=150) was between 14-63 years and majority (34.7%) belonged 21-30 years of age.



according to educational status

Figure-1: Shows 24% illiterate, 36.7% had primary level of education, 6% had secondary level education, 21.3% only can read and 12% only can sign.

Table 2: Distribution of the respondents by occupation

Occupation	Frequency	Percent
Catch snake	47	31.3
Play game	22	14.7
Kabiraj	12	8.0
Singing	40	26.7
Others	16	10.7
Catch snake, Play game	13	8.7
Total	150	100.0

Table-2 shows that 31.3% were snake catchers, followed by singers (26.7%).

Table 3: Distribution of the respondents by different health problems.

Health	Frequency	Percent
GIT disease	53	27.2
Skin disease	16	8.2
Allergy problems	23	11.8
Eye problems	58	29.7
Urinary problem	45	23.1
Total	195	100.0

Table-3: shows that 27.2% suffered from GIT disease, 8.2% suffered from skin disease, and 11.8% suffered from allergy problem. Fifty-eight persons suffered from eye problems while 45 respondents had suffered from urinary problems.

Table 4: Distribution of the respondents by receiving treatment.

Receiving treatment from	Frequency	Percent
Doctor	37	24.7
Hospital	73	48.7
Polli chikasak	20	13.3
Kabiraj	4	2.7
Drug seller	10	6.7
Self treatment	6	4.0
Total	**150**	**100.0**

Table-4: shows that 48.7% went to hospital and 24.7% went to doctor. Among others 13.3% went to a Polli chikasak when they got sick.

Discussion

This descriptive cross sectional study was aimed to find out the health problems among the snake charmers in a selected rural area in Bangladesh. A total of 150 snake charmers were studied. Age range of the study subjects were 14-63 years and majority (34.7%) belonged to 21-30 years of age.

Among the respondents 62.7% had been suffering from different diseases for the last 3 months which include GIT disease 27.2%. Fifty-eight persons (29.7%) were suffering from eye problems and 23.1% had urinary problem. Only 39.2% were capable to take treatment after a disease condition or suffering from an injury. A remarkable 48.7% went to hospital while 24.7% visited a doctor. Only 1.7% was capable of paying a visit due to financial insufficiency.

Conclusion

It could be concluded that majority of the snake charmers suffering from diarrhea, dysentery, scabies, eczema, burning maturation and different eye problems. Though their health sacking behavior was satisfactory when they got sick or any injury occurred they went to the hospital followed by going to a doctor. Sometime they could not afford to go to doctor or hospital due to financial insufficiency. Education was the vital factor, without proper education their socio demographic condition, personal hygiene and health status could not be improved. It is therefore clear that a notional strategy on snake charmers health is needed.

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Knowledge and Awareness regarding HIV/ AIDS in Selected Villages of Mirzapur Upazilla

CS Bose [1], M Sarker [2]

Abstract

Background: *AIDS is considered as one of the most dangerous disease conditions ever recorded worldwide having 100% mortality rate. It can be prevented by raising people's awareness through massive public information, education and motivation.* ***Objective:*** *The present study makes an attempt to assess the knowledge and awareness regarding HIV/AIDS.* ***Methods:*** *A community based, descriptive cross-sectional study was conducted among 475 villagers at Mirzapur Upazilla, Tangail from July to December 2012. Data were collected using a semi-structured questionnaire by face to face interview.* ***Results:*** *The respondents were 475, of them, 323(68%) were female and 152 (32%) were Male. Mean age of the respondents was 29.09± 8.179 years with a range of < 20 years to >35 years. Most 433 (91.2%) of the respondents were married and educated 389 (82%). Majority 441 (92.8%) were Muslim and 337 (70.9%) belonged to nuclear family. Most 244 (51.4%) of the respondents monthly family income was Taka 5001-10000 with mean income of Taka 9414.95. According to the respondents, sex with multiple partners 410 (86.31%), followed by sex with HIV infected partners 382 (80.42%), transfusion with infected blood 372 (78.31%) and unprotected sex 295 (62.10%) respectively were the mode of transmission for HIV/AIDS. Out of 475 respondents, 422 (88.84%) were informed about HIV/AIDS transmission from television, followed by 224 (47.15%) friends & relatives, 119 (25.05%) from radio and 89(18.73%) from news paper respectively. Regarding level of knowledge on HIV/AIDS, most 269 (56.6%) of the respondents had shallow knowledge, 123(25.9%) had good knowledge and 83 (17.5%) respondents had poor knowledge. The effect of age, sex, occupation, education, age at marriage, monthly income on knowledge showed that education and monthly income of the respondents had significant influence on HIV/AIDS knowledge and awareness (P<0.05).* ***Conclusion:*** *Useful and fruitful media campaigns to educate the rural people regarding HIV/AIDS and integrated Government and Non Governmental approach is strongly suggested for providing knowledge and creating awareness to control spread of HIV/AIDS among the rural people in Bangladesh.*

Keywords: Knowledge, Awareness, HIV/AIDS

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Introduction

The fatal disease Acquired Immune Deficiency Syndrome (AIDS) is a condition caused by a virus called Human Immunodeficiency virus (HIV). This Virus attacks the immune system, the body security force that fights off infections.[1] Once HIV starts damaging the human immune system, it ultimately develops AIDS and ends in death.[2] It is a condition when the immune system begins to fail and leads to life-threatening opportunistic infections. The existence of HIV/AIDS poses a serious challenge to human beings and its impact on a country is tremendous. Pandemic AIDS has affected most countries in the world. In 2010, the total number of people living with HIV was 34.0 million with adult prevalence rate of 0.8% and women prevalence rate of 0.6%. Newly infected with HIV was 2.7 million and the number of deaths due to AIDS was 1.8 million.[3] Every day, over 6800 persons become infected with HIV and over 5700 persons die from AIDS, mostly because of inadequate access to HIV prevention and treatment services.[4] In many developing countries, HIV prevalence is above 1%, but in none of the developed countries, HIV

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prevalence has ever crossed the 1% mark.[5] The overall prevalence of HIV in Bangladesh is relatively low but infection has reached significant proportions in certain high-risk groups and may soon spread to other groups.[6] Most of the people who are engaged in high risk behaviors do not know how HIV is transmitted and are not aware that their behavior puts them at risk.[7] The ability of the people s either knowledge about HIV/AIDS or the mode of transmission as well as its prevention is very limited.[8] Epidemiological studies have identified the main routes of transmission of HIV to be unsafe sexual intercourse, intravenous injections with contaminated needles, unscreened or contaminated blood transfusions, and transmission from an infected mother to her child during pregnancy, delivery or breast feeding.[9] Bangladesh is considered a high-risk country for several reasons. Bangladesh is geographically vulnerable to HIV/AIDS due to its high prevalence to India, Myanmar, Nepal and Thailand. India alone has a prevalence rate of 0.36% which is more than half of all the people living with HIV/AIDS in Asia.[4] Furthermore, Bangladesh has a close trade ties with Thailand. The epidemic is severe in all these countries. But knowledge about this virus and its transmission still remains incomplete.[10]

Though there is no cure or vaccine for HIV infection, it can be prevented by raising people s awareness through massive public information and education campaign.[11] Since a cure or vaccine is unlikely in the near future, efforts to prevent the HIV epidemic must focus on public awareness. Consequently, there is an urgent need for a comprehensive prevention program to control the spread of HIV/AIDS in Bangladesh.[12] In this critical situation, public awareness can play a dominating role in preventing HIV/AIDS epidemic.[13] Useful and fruitful media campaigns are strongly suggested for creating knowledge and awareness to control the spread of HIV and AIDS.[14] Mass awareness campaigns on HIV/AIDS improve the critical situation.[15]

Since Bangladesh is still considered low-prevalence country, no special focus has placed on the general population. As a result focus continues to be mainly on high risk groups The present study makes an attempt to assess knowledge and awareness regarding HIV/AIDS transmission and prevention among the people rural area of Bangladesh.

Materials and Methods

This was a descriptive cross sectional study conducted in selected villages of Mirzapur upazila Tangail. The study population comprised of the villagers of Jamurki, Satiachara, Chukuria, Bania and Korail of Mirzapur upazila. Sample size was 475. Respondents within age group of 15 to 45 years and who heard about HIVIAIDS were included in the study. The study was conducted for a period of 06 (six) months from July to December 2012. Sample size was detected by using formula $n= Z^2 pq/d^2$. Convenient sampling technique was used to select the sample for data collection. Verbal informed consent was taken from the respondents for data collection. Data were collected by a semi structured questionnaire as research instrument to carry out the study by face to face interview. The questionnaire has two parts consisting of socio-demographic characteristics (age, sex, marital status, education, occupation, religion, family type and monthly family income) and HIV/AIDS related variables (mode of transmission of HIV/AIDS, prevention of HIV/AIDS, curability of HIV/AIDS and source of information on HIV/AIDS). The data were collected, checked, verified and then entered into the computer. Only fully completed questionnaire were entered into the computer for final analysis. The analysis was carried out with the help of SPSS version 17.

Knowledge Score

Here knowledge related HIV/AIDS questions in the questionnaire were 4 in number. All questions have three parts- yes, no, don't know. We gave 1 mark on 'yes' and 0 marks on 'no' and 'don't know'. The highest score of knowledge level obtained was 21 marks and the lowest score of knowledge level was 0 marks. By dividing the knowledge score into three groups we divide the knowledge score by one third for each group that is, Poor knowledge level (0-7), Shallow knowledge level (8-14), Good knowledge level (15-21).

Results

Table 1: Distribution of socio-demographic characteristics of the respondents (n=475)

Socio-demographic Characteristics	Number	Percent	Mean ±SD
Age (years):			
≤20	72	15.2	
2 1-25	106	22.3	
26-30	144	30.3	29.09
3 1-35	63	13.3	8.179
>35	90	18.9	
			Sex
Male	152	32.0	
Female	323	68.0	
Marital status			
Married	433	91.2	
Unmarried	42	8.8	
Age at marriage			
<15 years	110	25.4	18.85 4.
16-20 years	201	46.4	476
21-25 years	88	20.3	
>25 years	34	7.9	
Religion			
Muslim	441	92.8	
Non-Muslim (Hindus)	34	7.2	
Education			
Illiterate	86	18	
Literate	389	82	
Work status (No=House Wife, Yes= Working)			
No	243	51.2	
Yes	232	48.84	
Family type			
Nuclear	337	70.9	
Joint family	91	19.2	
Extended family	47	9.9	
Number of family members			
<3	131	27.6	5. 97 2.5
4-6	250	52.6	03
7-8	53	11.2	
>8	41	8.6	
Monthly family income (taka)			
≤5000/-	69	14.5	9414.95
5001/-10000/-	244	51.4	3660.579
10001- 15000	138	29.1	
>15000/-	24	5.1	

Table 1 shows that among 475 respondents, 323(68%) were female and 152 (32%) were male. Mean age of the respondents was 29.09+ 8.179 years with a range of <20 years to >35 years. Among the respondents, majority 433 (91.21%) were married and 42 (8.8%) were unmarried. Regarding educational level, 389 (82%) were educated and 86 (18.1%) were illiterate. Most 243 (51.21%) of the respondents were housewives and the rest 232(48.84%) were engaged in income generating activities. Majority 441(92.8%) were Muslims and rest 34 (7.2%) were Hindus. Most 337 (70.9%) of the respondents were from nuclear family and among others, 91(19.2%) were from joint family and 47 (9.9%) were from extended family. The mean family size was 5.97 person. The mean family income was Taka 9414.95 (SD 3660.579) and the income of majority 244 (51.4%) were Taka 5001-10,000.

Table 2: Distribution of the respondents by knowledge on mode of transmission of HIV/AIDS (n=475)

Made of transmission of HIV/AIDS	Frequency	Percent
Sex with multiple partners	410	86.31
No protection during sex	295	62.10
Through HIV infected partners	382	80.42
Through infected blood transfusion	372	78.31
Use of infected needles and syringes	164	34.52
Use of un-sterilize instrument in surgery	74	15.57
Use of shared razor	153	32.21
Swimming same ponds, sharing toilet, lack of hygiene	17	3.57

*Multiple answers

According to table 2, 410(86.31%) of the respondents knew that HIV could be transmitted by sex with multiple partners, 382(80.42%) by HIV infected partners, 372(78.31%) by infected blood transfusion, 295(62.10%) by no protection

during sex, 166(34.52%) by use of infected needles and syringes, 153(32.21%) by use of shared razor, 74(15.57%) by use of un-sterilize instrument in dental surgery and 17(3.57%) by swimming in the same pond, sharing toilet, lack of hygiene.

Table 3: Distribution of respondents by knowledge on prevention of HIV/AIDS (n=475)

Knowledge on prevention of AIDS	Frequency	Percent
Safe sex (Sex with husband/wife only)	394	82.94
Condom use only	225	47.36
Safe sex and condom use	303	63.78
Screening blood prior to transfusion	361	76.00
Avoid used infected syringes	320	67.36
Sterilizing needles and syringes before use	305	64.21
Avoid pregnancy if infected with HIV/AIDS only	191	40.21
Others (hygiene of cloths, toilet or soap)	75	15.78
Don't know	49	10.31

*Multiple answers

Table 3 shows that regarding prevention of HIV/AIDS. 394(82.94%) respondents thought safe sex (sex with husband/wife only), 36 1(76%) thought screening of blood prior to transfusion and 320 (67.36%) regarded avoidance of reused syringes as ways to prevent HIV/AIDS. Condom use only, sterilizing needles and syringes before using, safe sex and condom use, avoidance of pregnancy if infected with HIV/AIDS were mentioned by 225(47.36%), 305(54.21%) 303(63.78%) and 191(40.21%) respondents respectively as the way to prevent HIV/AIDS. Only 49(10.31%) respondents did not know how to prevent HIV/AIDS.

However, while responding about availability of cure of HIV/AIDS, 176(37.1%) respondents mentioned that HIV/AIDS is not a curable disease, 133(28%) mentioned that it is a curable disease and 166(34.9%) respondents had no knowledge about availability of cure for the (Figure-I)

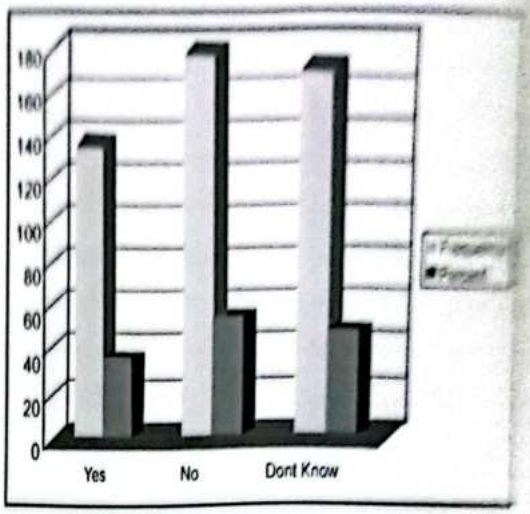

Figure 1: Distribution of the respondent knowledge on curability of HIV/AIDS (n= 475)

Table 4: Distribution of respondents by source information on HIV/AIDS (n=475)

Source of information of HIV/AIDS	Frequency	Percen
News paper	89	18.73
Radio	119	25.05
Television	422	88.84
Friends and relatives	224	47.15
Health workers, Doctors, School Teachers	112	23.57
Magazine, Slogan or poster	67	14.10
Others (bill board, pamphlet, wall slogan)	7	1.47

*Multjple answers

Table 4 shows out o 475 respondent 422(88.84%) had knowle e about HIV/AID from television followe by 224(47.15% 119(25.05%), 89(18.73% from friends relatives, radio and news pa respectively.

The knowledge score we categorized in th following manner:

★ Poor knowledge (< =7 score)

★ Shallow knowledge(8-14 score)

★ Good knowledge (15-21 score)

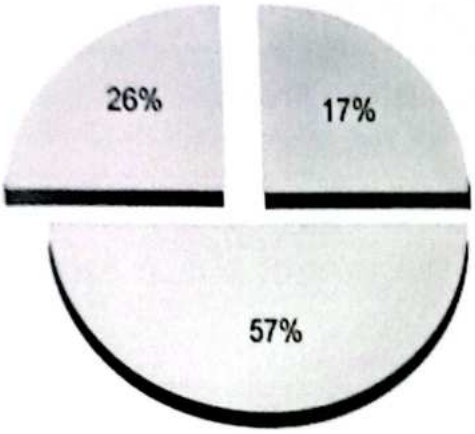

Figure 2: Distribution of the respondents by knowledge level on HIV/AIDS (n=475)

Figure 2 shows regarding knowledge level of HIV/AIDS, 269 (56.6%) of the respondents had shallow knowledge on HIV/AIDS followed by 123 (25.9%) with good knowledge and 83 (17.5%) respondents with poor knowledge (Figure-2).

Table 5: Regression analysis showing the effect of independent variables on HIV/AIDS knowledge level (n=475)

Variables	B	²	df	Sig.	95% C.I. for EXP (B)	
					Lower	Upper
Age	.175	.608	1	.436	.767	1.852
Sex	-.242	.422	1	.516	.379	1.628
Occupation	-.023	.007	1	.934	.572	1.671
Education*	1.071	12.809	1	.000	1.624	5.250
Age at marriage	.435	2.281	1	.131	.878	2.717
Husband education	-.407	1.429	1	.232	.342	1.297
Monthly income*	.642	7.752	1	.005	1.209	2.985
Constant	-1.396	.940	1	.332		

The logistic regression analysis of the effect of age, sex, occupation, education, age at marriage, monthly income on knowledge score showed that education and monthly income of the respondents had significant influence on HIV/AIDS knowledge and awareness (Table-5).

Discussion

AIDS is an emerging socio-economic and medical problem of great magnitude having a worldwide distribution. Although relatively few HIV positive cases have been identified by the Government of Bangladesh, many hidden cases are likely to exist. Variety of societal factors such as rapid urbanization, rising unemployment and economic problems among different population segments are resulting in a greater risk of AIDS. Along with, poor medical facilities, lack of sufficient screening practices, unsafe sexual practices among some groups of our population is increasing the chances of HIV infection. So HIV infection could become an alarming situation for our country.

The present study showed that, out of 475 respondents, 323 (68%) female and 152 (32%) male had heard about HIV/AIDS. Female respondents were-more than males in the study population because the males were busy in the field during the time of data collection.

According to the BDHS 79% of both male and female had heard about HIV/AIDS.16 Regarding educational level, we found that almost 389 (82%) were educated and 86 (18%) were illiterate. This finding was similar with BDHS, 2011.16 Age is the most important demographic factor in determining the extent of knowledge and awareness. In this study, it is found that among the respondents, who are> 25 years age group, 180 (60.6%) had good knowledge and 117 (39.4%) had poor knowledge on HIV/AIDS. And among the respondents who are < 25 years age group, 104(58.4%) had good knowledge and 74 (41.6%) had poor knowledge on HIV/AIDS.. A study done on garment workers in Gazipur, Bangladesh showed that the age of the respondents had statistically significant effect on knowledge and awareness about HIV/AIDS.[16] Education is another significant predictor on having knowledge about HIV/AIDS.

In this study there was a strong association between education and knowledge of HIV/AIDS. (p =0.001). This finding is similar to the studies done in Nigerian Prisons[17] garments worker in Gazipur, Bangladesh1, ever married women in Bangladesh[18], female adolescents knowledge in Bangladesh.[19] In fact, education is the pathway of communication for any message. Increased age with increased level of education give an opportunity to have more reproductive health information, more use of heath care services and support from peer groups.

According to the respondents of the study, the most common mode of transmission was sex with multiple partners (86.3%), followed by HIV infected partner (80.4%), by infected blood transfusion (78.3%), no protection during sex (62.1%). These study findings are similar to the study done by M. Mizanur Rahman[14] and by Murtala Mohammed Ruma.[20]

In this study, according to the knowledge of prevention on HIV/AIDS, most 394(82.94%) of the respondents thought safe sex (sex with husband/wife only) can prevent HIV/AIDS. According to BDHS 2011,16 51% female and 69% male knew that HIV/AIDS can be prevented by safe sex. Among the respondents, 361 (76%) and 320 (67.36%) mentioned screening blood prior to transfusion and avoid reused syringes as ways to prevent HIV/AIDS respectively. But 225 (47.36%) thought condom use only can prevent HIV /AIDS. In BDHS 2011,16 44% female and 69% male knew that HIV/AIDS can be prevented by using condom. Among the respondents 305 (64.21%) 303 (63.78%), 191 (40.21%) respondents thought, sterilizing needles and syringes before use, safe sex and condom use, avoidance of pregnancy if infected with HIV/AIDS respectively were the ways to prevent HIV/AIDS. This study finding is similar with the study findings conducted by A. E. Oyo-Ita[21] and Idayat Odunola Agboola.[22]

In this study, about 133(28%) mentio HIV/AIDS is a curable disease and 17% respondents mentioned that HIV/AIDS curable disease and rest of the respondent (34.9%) had no knowledge about curab HIV/AIDS. This finding is similar w research findings conducted by Singh Arun A E Oyo-Ita.[21]

The current study respondents described tele as the main source of information on HIV/ This suggests that this mass media tool has re to most of the population and may be u properly to create awareness. Similar finding observed in the study done in Northern In Southern India,[24] among nursing students done in Yemen.[26] Friends and relatives, radio newspaper were also major sources in our st The study conducted among rural youth in In showed that the main sources of informa regarding HIV/AIDS were friends and televisio

The result of logistic regression analysis revea that education and monthly income of r respondents had statistically signific relationships with the HIV/AIDS awareness of r respondents. Literate young people were m aware of HIV/AIDS than illiterate, at all the leve as found in the study conducted among rural you in India[27] and in studies conducted Bangladesh.[1,18,28]

Our study explored one of th important measu to prevent HIV/AIDS, which is awareness of t disease. The study was a stu ey at one point time so it has the limitation of a cross-sectio study. However, the findings the study are va relevant to the people in rura reas. Young adul are more vulnerable and less covered by HIV/AIDS prevention prog mmes in directin future efforts at creatin awareness abou HIV/AIDS, particularly in rur reas.

Conclusion

The study provided information about the knowledge and awareness regarding HIV/AIDS among the villagers of Mirzapur, which will help health policy makers and planners, to formulate a plan and a health education programme.

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Repair of Furcal Iatrogenic Perforation with Mineral Trioxide Aggregate (MTA): A Case Report

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Abstract

Perforations are significant iatrogenic complications of endodontic treatment and could lead to endodontic failure. The prognosis of this perforation is now excellent with the advent of new technologies and biocompatible materials. With the advent of relatively new biocompatible material, mineral trioxide aggregate (MTA) is suitable for closing the communication between the pulp chamber and the underlying periodontal tissues. In this case report, the patient presented with the complaint of continuous dull pain in her left mandibular first molar. The tooth was attempted for endodontic treatment and perforation was occurred three weeks ago. Radiographic examination revealed destruction in the furcal area with radiolucency. Considering the above conditions, endodontic treatment and non-surgical repair of furcal perforation with mineral trioxide aggregate followed by permanent restoration was planned. After 12 months follow up, the tooth is symptomless. However, long term clinico-radiographic observation is necessary.

Keywords: Repair, Iatrogenic furcal perforation, MTA. ***(J Cont Dent Sci 2017;5(1):28-32***

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Introduction

Furcal perforation is a communication between root canals and periodontal ligaments through the pulp chamber.[1] It can occur at any stage while performing endodontic therapy that is during access cavity preparation or during instrumentation or due to pathological condition such as caries, resorption etc. The result is a chronic inflammatory reaction of the periodontium that can lead to irreversible loss of attachment or loss of the tooth.[2] Factors that influence the outcome of perforated teeth include size of the perforation, time of repair, level and location of the perforation, presence of periodontal disease and pre-endodontic pulp vitality status.[3] On the basis of these characteristics, it can be decided if the perforation can be managed either surgically or non-surgically, and the prognosis is generally excellent if the problem is well diagnosed and the repair is well-performed with a material which can provide proper sealing ability and biocompatibility. Various materials have been used in managing perforations, including zinc oxide eugenol, amalgam, calcium hydroxide, composite resin, glass-ionomer and resin-modified glass-ionomer. Recently Mineral Trioxide Aggregate (MTA) and biodentine have been advocated.[4] The ideal material for treating radicular perforations should be nontoxic, non-absorbable, radiopaque, and bacteriostatic or bactericidal; it should also provide a seal against microleakage.[5] In this case report, non-surgical repair of floor perforation on the left mandibular first molar was performed with MTA. MTA has many favorable properties, including good sealing capability, biocompatibility, antibacterial activity, marginal adaptation, radiopacity and ability to set up in the presence of MTA is a mineral powder comprising of hydrophilic particles.

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It contains 50-75% calcium oxide and 12-25% silicon dioxide. These two materials comprise 70-95% of the cement. These two raw materials react and form tricalcium silicate, dicalcium silicate, tricalcium aluminate and tetracalcium aluminoferrite. By adding water, the cement is hydrated and forms silicate hydrate gel. A radiopaque material (bismuth oxide) is also added. Iron is added to white MTA in order to obtain gray MTA. It has a pH of 12.5 and polymerizes in presence of humidity approximately 3 - 4 hours.[6] Mineral trioxide aggregate (MTA) has all of these characteristics and has been applied with good outcomes in root-end surgery, direct pulpal coverage, apexification, radicular resorption, and repair of lateral radicular and furcal perforation.[7]

Case Report

A 30 years old female patient reported to the Department of Conservative Dentistry and Endodontics, BSMMU, with the complaint of continuous dull pain in the left mandibular first molar. She expressed that the tooth was attempted for endodontic treatment three weeks before and perforation has occurred at that time. On clinical examination, the tooth was sealed coronally with temporary cement and it was sensitive to percussion and palpation. The mean probing pocket depth was within normal level (2 mm). Radiographic examination revealed destruction in the furcal area with radiolucency. The condition was diagnosed as symptomatic chronic periodontitis along with floor perforation in left mandibular first molar. Considering the above conditions, endodontic treatment and non-surgical repair of furcal perforation with mineral trioxide aggregate followed by permanent restoration was planned.

Treatment procedure

The whole treatment procedure was explained to the patient and consent was taken. After isolation of the operative field with cotton roll, the temporary restorative material was removed from the tooth and the perforation area was clinically seen. A radiograph was taken with 30 no GP point to confirm the perforation. The perforated area was cleaned by copious irrigation with 0.9% saline solution. A cotton pellet was placed in the orifice of perforation. Working length measuring radiograph was taken. The root canal was cleaned and shaped according to standardized technique and irrigated with 1% sodium hypochlorite (NaOCl) and 2% chlorhexidine (CHX) solution. Then calcium hydroxide dressing was given for one week as an intracanal medicament. On the next visit, root canals were irrigated copiously with large volume of normal saline followed by 1% sodium hypochlorite (NaOCl) to remove all the calcium hydroxide properly. Final irrigation was done to remove the smear layer with EDTA (17%). Then the canals were dried and obturation was done. After that the perforation was sealed with white MTA (Angelus, Brazil) mixed with distilled water, as suggested and supplied by manufacturer. One sachet of MTA was mixed with one drop of distilled water for thirty seconds on a sterile glass slab by a stainless steel spatula. It was placed on the perforation site with a sterilized amalgam gun and was condensed with damp cotton. Then excess moisture was removed from a wet cotton pellet and placed in contact with MTA. The rest of chamber was closed with glass-ionomer and a radiograph was taken. After 24 hours, before removal of temporary cement another radiograph was taken to see the expansion of MTA. Then, Temporary cement was removed to check if MTA was set and the tooth was restored with direct restorative materials named miracle mix. Bite was cheeked and post operative radiograph was taken. After 12 months follow up, the tooth is symptomless.

Discussion

Furcal perforation is a procedural accident; to prevent the consequent bacterial contamination the perforation sites should be repaired as quickly as possible by employing a suitable material.[8] Holland et al[9] had shown that the lateral root perforations sealed with MTA after contamination presented worse repair than the non contaminated immediately sealed perforations. In the presented case, the time between perforation and repair was three weeks.

The material is used in direct contact with soft and hard periodontal tissues; therefore, the material is necessary to be highly biocompatible and nontoxic.[10] Release of hydroxyl ions, a sustained high pH for extended periods, modulation of cytokine production calcium hydroxide, and a mineralized interstitial layer may be responsible for the excellent biocompatibility and biological activity of the material.

It has no mutagenic potential, low cytotoxicity, and stimulates the formation of mineralized tissue.[6] All of the restorative materials currently used (amalgam, Super EBA, IRM, composite resins, zinc oxide eugenol-based materials, conventional glass-ionomer) require a dry field, but MTA the only material doesn't require a barrier, is not affected by moisture or blood contamination, because it is hydrophilic[11], so MTA can today be considered the ideal material to seal perforation. MTA showed less microleakage and better sealing ability when used for furcation repair.[12] Expansion of MTA during setting is responsible for its excellent sealing ability. Usually a thickness of 3 mm to 5 mm is sufficient to provide a good seal.This high pH level associated with formation of calcium hydroxide during hydration. Radiopacity of MTA was 7-17 mm of equivalent thickness of aluminium, because it is more radiopaque than conventional gutta-percha and dentin, it should be easily distinguishable on radiographs.In 2 ours MTA had the lowest compressive stren (40 Mpa) among the materials (Amalgam, S r EBA & IRM) tested, but it increased after days to 67 MPa. The increase in compressiv trength of MTA required the presence of moistu

Fig.1: Site of perforation

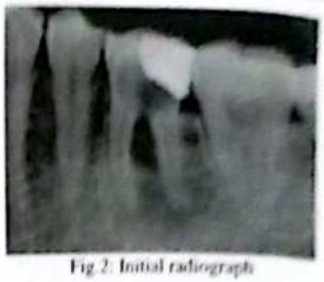

Fig.2: Initial radiograph

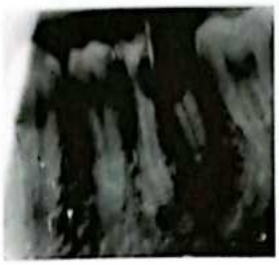

Fig.3: Perforation tracing by GP Point

Fig.4: Working length determination

Fig.5: Perforation repair by MTA

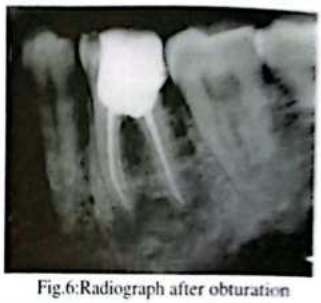

Fig.6:Radiograph after obturation

Fig.7:Follow up radiograph at 3 months

Fig.8: Follow up radiograph at 6 months

Fig.9: Follow up radiograph at 12 months

Lack of solubility of MTA has been stated as an ideal characteristic for perforation repair.[13,14]

MTA has the capacity to induce bone, dentin, and cementum formation and regeneration of periapical tissues. MTA stimulates immune cells to release lymphokines and bone coupling factors (interleukines, osteocalcin, alkaline phosphatase, bone sialoprotein, osteopontin), required for the repair and regeneration of cementum and healing of osseous defects.[13] MTA is primarily composed of calcium and phosphate ions, which are also the main constituents of the dental hard tissues. This resemblance in chemical composition to the tooth structure, the ability of MTA to release Ca ions and its capacity to form hydroxyapatite are dentinogenic activity.[15] Microscopic examinations of periodontal tissues after perforations in the furcal area and subsequent sealing with MTA demonstrated repair of the periodontium, and new cementum formation over the material.[16]

The control of inflammatory processes in the defect area during the management of perforation represents one of the main goals of the treatment, in addition to promoting the health of the surrounding tissue.[17] In this case, to achieve a better tissue response, the perforation site was disinfected with 2% chlorhexidine, 1% NaOCI. Nicholls[18] recommended that contaminated perforations be washed out with hypochlorite. Calcium Hydroxide was used to disinfect the perforation site. Because in infected area i.e. in acidic media MTA cannot show its proper setting ability. MTA was found to have an antibacterial effect on facultative bacteria, but no effect on the strict anaerobes.[19] So it is used as bacteriostatic agent in endodontics.

In this case, the perforation defect was managed non-surgically as it is non-invasive, less technique sensitive, cost effective and prognosis is usually better than surgical procedure. Other options of perforation repair include premolarization and hemisection. These are indicated where periodontal involvement of one root is severe, loss of bone is extensive in the furcation area and when extensive bone loss has occurred around one root of molar.

Conclusion

MTA is a very promising product for its controllable and predictable outcome. Based on this case, it can be concluded that, the prognosis of perforated teeth is better today than the past, due to the improved vision as well as the use of extreme biocompatible materials such as MTA. For long term prognosis, patient's clinical and radiographical changes should be monitored.

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