COMPARISON OF BIPP GAUZE PACKING VERSUS MAXILLARY ANTRUM PACKING WITH FOLEY'S CATHETER AFTER CALDWELL-LUC SURGERY IN TERMS OF RE-BLEEDING AND DISCOMFORT

Muhammad Ahmed Khan[1], Arfat Jawaid[2], Shahid Bin Faiz[3]

[1,2] Department of ENT, CMH, Bahawalpure-Pakistan
[3] Department of ENT, CMH, Nowshera-Pakistan
Address for correspondence:
Dr. Muhammad Ahmed Khan
102 Medical Battalion, Bahawalpure Cantt-Pakistan.
E-mail: ahmedkhan2036@hotmail.com
Date Received:
May 29, 2014
Date Revised:
June 13, 2015
Date Accepted:
November 5, 2015

ABSTRACT

Objective: To compare efficacy and discomfort caused by maxillary antrum packing with Foley's catheter versus BIPP gauze packing after Caldwell-Luc surgery.

Methodology: This Quasi experimental study was carried out at two centres CMH Kharian and PAF Hospital Faisal, Karachi from June 2012 to June 2014. A total of 46 patients who underwent Caldwell-Luc surgery were included in the study. The cases were divided in two groups of 23 each. In Group A patients, maxillary antrum was packed with Foley's catheter after Caldwell-Luc surgery and in Group B patients, packing was done with BIPP gauze. Results in terms of efficacy and discomfort were observed. Efficacy was assessed by control of bleeding and subjective discomfort was assessed based on VAS (Visual Analogue Scale).

Results: In Group A average age of patients was 36.30(SD+13.52) and in Group B average age of patients was 39.65 (SD+13.84). There were 56.52% males in Group A and in Group B there were 60.86% males. Whilst the pack was in situ, average pain score in Group A (Foley's catheter pack group) was 4.09 (SD+0.73) and in Group B, average pain score was 4.17(SD+0.83). On removal of pack, pain caused by BIPP gauze was significantly higher i.e average pain score of Group B was 7.30 (SD+1.10), however that of Group A was 5.13 (SD+1.32) ($p<0.001$). There was no case of bleeding after pack removal which showed that both types of packing are equally effective.

Conclusion: Maxillary antrum/antral packing with Foley's catheter is equally effective as compared to BIPP gauze packing and causes significantly less pain on removal as compared to BIPP gauze pack after Caldwell-Luc surgery.

Key Words: Caldwell-Luc surgery, Foley's catheter, BIPP gauze, Maxillary antrum.

This article may be cited as: **Khan MA, Jawaid A, Faiz SB. Comparison of BIPP gauze packing versus maxillary antrum packing with foley's catheter after Caldwell-Luc surgery in terms of re-bleeding and discomfort. J Postgrad Med Inst 2015; 29(3): 128-30.**

INTRODUCTION

Caldwell-Luc procedurewas described by George Caldwell in 1893 and Henri Luc in 1897 as a surgical approach to the maxillary sinus via canine fossa to address the diseases of maxillary sinus[1]. The frequency of Caldwell Luc procedure has decreased with the advent of functional endoscopic sinus surgery (FESS). It is still indicated in cases of irreversible scarring, polypoidal mucosal inflammation, antrochoanal polyps and inverted papilloma. In few cases it isindicated for removal of foreign bodies from maxillary sinus and provides an access to pterygomaxillary fissure and pterygo-palatine fossa.This approach is also required for evaluation and stabilization of orbital floor fracture and removal of orbital floor in decompression[2]. During Caldwell-Luc procedure, incision is made 5mm below the gingivo-labial sulcus extending from pyriform aperture medially to the maxillary tuberosity laterally. The incision cuts through the mucous membrane and the periosteum. The mucoperiosteal flap is elevated from canine fossa to the infraorbital nerve, avoiding injuring the nerve. Maxillary sinus is then entered with help of osteotome or drill. After removing the disease from the antrum, inferior meatal-antrostomy is carried out. It is inevitable to avoid bleeding after sinunasal surgeries because of the rich blood supplythat is why antrum and nose has to be packed with either BIPP gauze pack or Foley's cath-

eter. One end of BIPP gauze pack is taken out through inferior meatal-antrostomy for later removal. Similarly if Foley's catheter is used, its tip is brought out through nose and air or water is filled in it to inflate its bulb inside the antrum. BIPP gauze pack or Foley's catheter is left in place for almost one week and then removed carefully. Antrum packing not only causes discofort to the patient but also causes physical and psychological trauma especially while removing the pack[3,4]. Sometimes there is even resumption of bleeding after removal of pack.

Caldwell-Luc is a safe procedure[5] but just like anyother surgical procedure has its complications. The most common complications of this surgical procedure include: facial swelling, pain and/or numbness of the face and pain and/or numbness of the teeth/gums. Other less common complications are postoperative bleeding, oro-antral fistulae, epiphora and dental discoloration[6].

METHODOLOGY

This quasi experimental study was carried out at the ENT Department Combined Military Hospital (CMH) Kharian and ENT Department PAF Hospital Faisal from June 2012 to June 2014. Total 46 patients underwent Caldwell-Luc operation during this time period in the two centers. All the Caldwell-Luc operations were done under general anesthesia. Indication for these surgeries included chronic maxillary sinusitis (19 cases), sinunasal polyposis (17 cases), recurrent antrochoanal polyps[7], inverted papilloma (2 cases) and impacted foreign body (01 case). These 46 patients were included in the study and randomly divided into two groups (each group of 23 patients). In Group A patients, postoperative maxillary antrum packing was done with commonly available latex made Foley's catheters, of size 16 or 18 French (the bulb of which has a capacity of 30-50 cc). In group B patients, post-operative packing was done with BIPP gauze pack. Air was inserted into Foley's catheter to fill its bulb for retention and exerting pressure in antrum. During postoperative period subjective pain of the packs was assessed when the packs were in situ and during packs removal according to the visual analogue scale (VAS). The pain score ranged from 1 to 10. Score 1 indicated lower degree of pain and score 10 showed maximum pain. Efficacy of packing was assessed by checking rebleeding after pack removal which was removed after 07 days. All the data was recorded on a specially designed Performa.

Data had been analyzed using statistical package for social sciences (SPSS) version 19. Frequency and percentage were calculated for qualitative variables while mean and standard deviation (SD) were calculated for quantitative variable. Independent samples t-test was used to compare the quantitative variable. A p-value < 0.05 was considered significant.

RESULTS

Total 46 patients were included in the study (23 patients in each group). In Group A average age of patients was 36.30 (±13.52) and in Group B average age of patients was 39.65(±13.84). There were 13 (56.52%) males in Group A and in Group B there were 14 (60.86%) males. Whilst the pack was in situ, average pain score in Group A (Foley's catheter pack group) was 4.09 (±0.73) and in Group B, average pain score was 4.17(±0.83). It showed that average pain score in both groups was almost similar whilst the pack was in situ as shown in Table 1. On removal of pack, pain caused by BIPP gauze was significantly higher i.e average pain score of Group B was 7.30 (±1.10), however that of Group A was 5.13 (±1.32). This is shown in table 2. There was no case of bleeding after pack removal which showed that both types of packing are equally effective.

DISCUSSION

Average pain score in Group A (Foley's catheter pack group) and in Group B (BIPP gauze pack) was almost similar whilst the pack was in situ as shown in Table 1. On removal of pack, pain caused by BIPP gauze was significantly higher than average pain score of Group B, 7.30 (±1.10) versus 5.13 (±1.32) ($p<0.001$). There was no case of bleeding after pack removal in both the groups which showed that both the packing procedures are safe and have equal efficacy. No such study has been carried out in our setup, to compare these two commonly used packing procedures after Caldwell-Luc operation. However a study was carried out by Callejo et al who compared the two types of nasal packing for posterior epistaxis i.e Foley's catheters and BIPP gauze packs[8]. According to his study the mean pain score during the placement of pneumatic nasal pack was 6.7 as compared to 8.3 in cases of gauze pack, on visual

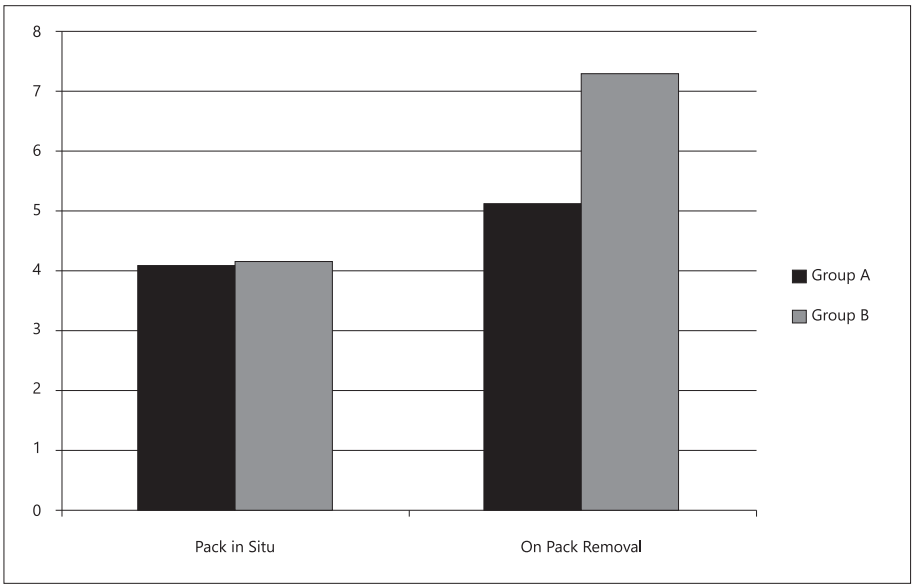
Table 1: Comparison of pain score between the two groups whilst pack in situ

Groups	Minimum	Maximum	Mean	Standard Deviation
Group A (n = 23)	3	5	4.09	0.73
Group B (n = 23)	3	6	4.17	0.83
p-value	< 0.709			

Table 2: Comparison of pain score between the two groups on pack removal

Groups	Minimum	Maximum	Mean	Standard Deviation
Group A (n = 23)	3	8	5.13	1.32
Group B (n = 23)	5	9	7.30	1.10
p-value	< 0.000			

Figure 1: Comparison of Mean Pain Score between Group A & Group B



analog scale and the mean score of pain at removal was 1.3 versus 2.1 in the pneumatic and gauze packs on VAS. This is comparable as in the present study, the gauze pack being more painful.

CONCLUSION

Maxillary antrum/antral packing with Foley's catheter is equally effective in controlling re-bleeding as compared to BIPP gauze packing and causes significantly less pain on removal as compared to BIPP gauze pack after Caldwell-Luc surgery.

REFERENCES

1. Huang YC, Chen WH. Caldwell-Luc operation without inferior meatalantrostomy: a retrospective study of 50 cases. J Oral Maxillofac Surg 2012; 70: 2080-4.
2. Minutha R, Sriram N. A study of Caldwell-luc approach in various etiologies. JEMDS 2013; 2: 6715-23.
3. Laing MR, Clark LJ. Analgesia and removal of nasal packing. Clin Otolaryngol 1990; 15:339–42.
4. Hwang JH, Liu CM, Liu TC, Hsu MC. Sphenopalatine ganglion block before removal of nasal packing. Laryngoscope 2003; 113:1423–4.
5. Matheny KE, Duncavage JA. Contemporary indications for the Caldwell-Luc procedure. Curr Opin Otolaryngol Head Neck Surg 2003; 11:23-6.
6. Low WK, Complications of the Caldwell-Luc operation and how to avoid them. Aust N Z J Surg 1995; 65: 582-4.
7. Samad I, Stevens HE, Maloney A. The efficacy of nasal septal surgery. J Otolaryngol 1992; 21:88–91.
8. Callejo FJG, Fernández NM, Martínez MTA, Moya-Angeler SF, Elena JM, Algarra JM. Nasal packing in posterior epistaxis. Comparison of two methods. Acta Otorrinolaringol Esp 2010; 61:196-201.

CONTRIBUTORS

MAK conceived the idea, did data collection and wrote the manuscript. AJ and SBF helped in data collection and writing up of manuscript. MFA did the data analysis. All authors contributed significantly to the final manuscript.