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Original Research Article

Comparative evaluation of one stage versus two stage surgical procedure for surgical extraction of bilaterally impacted mandibular third molars

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Abstract: A tooth which is completely or partially unerupted and is positioned against another tooth, bone or soft tissue so that its further eruption is unlikely is called an impacted tooth. The present study of comparative evaluation of surgical extraction of bilaterally impacted mandibular third molars in one stage surgical procedure versus two stage surgical procedures was undertaken to assess the safety, patient accessibility and relative efficacy. Anxiety, pain, difficulty in mastication, swallowing and speech did not show any statistical significant difference between the two groups but the patients who underwent removal of bilaterally impacted third molars in two visits had to face all these discomforts twice.
Keywords: Impacted tooth, Extraction

INTRODUCTION

Impacted third molar have long been recognized as a dental health problem since dentistry was first recognized as a learned health profession. The third molars show the highest incidence of impaction. An impacted tooth is defined as a tooth which is completely or partially unerupted and is positioned against any other tooth, bone or soft tissue that its further eruption is unlikely [2]. Development of anaesthesia technique of controlling pain and anxiety, recent .advances in radiology high speed rotary and cutting instruments, advancement In newer antibiotics made the removal of any type of impacted wisdom Tooth safe and relatively painless procedure.

Majority of the patients have bilaterally impacted lower third molars and frequently complain of pain and infection due to any of the impacted lower third molars. Bilaterally impacted lower third molars are removed in two different visits but, if a single surgical procedure is employed for the removal of the bilaterally impacted lower third molars, it may offer potential advantages for both patients and surgeons over removal in two visits.

The present study of comparative evaluation of surgical extraction of bilaterally impacted mandibular third molars in one stage surgical procedure verses two stage surgical procedure was undertaken to assess the safety, patient accessibility and relative efficacy.

Assessment of patient's acceptability for surgical removal of bilaterally impacted mandibular third molars in both the procedures has been done by evaluating anxiety, discomfort from pain, swelling, trismus, diminished chewing efficiency, time lost from routine duties, cost efficacy and overall Assessment of the procedure by the patients.

MATERIALS AND METHOD

All the subjects were randomly divided into two groups, each comprising of 20 subjects.

Group-I: Subjects to undergo surgical removal of bilaterally impacted mandibular third molars in one surgical session.

Group II: Subjects to undergo surgical removal of bilaterally impacted mandibular third molars in two separate (4-5 weeks apart) surgical sessions

In all the patients, standard incision was used and buccal guttering technique was followed irrespective of the side and the surgical session. Primary closure was done on both sides and each patient was recalled for check-up at different time intervals and data was recorded

RESULTS

In this study, 20 patients in each group were selected. All the patients were assessed clinically and radiographically and all the parameters were recorded

Anxiety was recorded on visual analogue scale before surgery for both the groups. The mean calculated was 3.75 and 3.62 for group I and group II, respectively Statistical analysis showed no significant difference between the two groups (P>0.05).

Pain, difficulty in mastication, swallowing and speech were scored by the patients on the visual analogue scale and the means of the scores were taken. Statistical analysis showed no significant difference between the two groups (P>0.05) as far as pain, difficulty in mastication, swallowing and speech were concerned.

Mouth opening was recorded by measuring the interincisal distance in millimeters on the various intervals of follow up Statistical analysis of means showed no significant difference between the two groups (P> 0.05).

Swelling was measured in millimeters between the two reference points, soft tissue gnathion on the midline and the tragus base on each side. Individual measurements for the right and left side were recorded preoperatively and postoperatively at the same time intervals of follow up Difference of preoperative and postoperative readings at the different intervals were taken as measurement of swelling. Statistical analysis of means between the two groups, however, also failed to show any significant difference (P> 0.05).

Surgical morbidity depending upon the parameters was recorded by the scores of 0 and 1 indicating absence or presence, respectively. Surgical morbidity also failed to show any significant difference between the two groups. Total time required in both the groups for removal of impacted third molars showed highly significant difference (P< 0.001). The mean time taken or surgical extraction for each patient in group I was 54 minutes as compared 78 minutes in group II patient

At the end of one month after surgery, the patients were asked for the days lost out of routine. These were the days when the patients limited their activities and rested due to the surgery. The mean calculated for group- I patients showed 1.75 days as compared to 3.55 days for group II Statistical significant difference was seen between these two groups

At the end of all the surgical sessions, and the follow up of one month, the patients were explained about the methods of one stage and two stage removal of bilaterally impacted third molars and asked about their opinion regarding the method by which the surgery was performed Statistical analysis showed significant difference (P< 0.001) regarding opinion of the patient.

Though, anxiety, pain, difficulty in mastication, swallowing and speech did not" show any statistical significant difference between the two groups but the patients who underwent removal of bilaterally impacted third molars in two visits had to face all these discomforts twice

DISCUSSION

The third molars show the highest incidence of impaction. An impacted tooth is defined as a tooth which is completely or partially unerupted and is positioned against any other tooth, bone or soft tissue that its further eruption is unlikely [2, 3]. Adelsperger J *et al.;* [1] found that radiographic appearance may not be a reliable indicator of the absence of the disease within a dental follicle. Removal of impacted lower third molar constitutes a large number of various oral and maxillofacial procedures performed by oral and maxillofacial surgeon. It is a procedure that demands technical skill, sound judgment, sound knowledge of anatomy and surgical principles, rationale of antibiotic therapy, good anaesthesia, proper medication, nutritional balance and total patient care. Sisk Allen L *et al.;* [8] concluded that complication were more numerous after the removal of third molar by less experienced surgeon.

Lopes V *et al.;* [7] reviewed indications for removal of third molars and found pericorinitis and pain are the most common indications. Many studies advocate early removal of impacted lower third molars to prevent any complication such as infection, periodontitis, caries, idiopathic pain, cyst formation and neoplasm. Lied hold R *et al.;* [6] assessed the only factor that influenced the indication for the removal with no disease was the patient's age .The general misconception prevailing in our clinics is to avoid single surgical attempt for the removal of bilaterally impacted lower third molars on the basis that whole tongue will be anaesthitized with resultant posterior fall of tongue. But the fact is, with the bilateral inferior alveolar nerve block, only superficial part of tongue is anaesthitized. The muscles controlling the movement of tongue are supplied by the hypoglossal nerve which is not anaesthitized.

It is quite sensible to remove both the impacted lower third molars at the same visit because of potential advantages for both patients and surgeons over removal in two visits. These are the reduction in time taken off work and general disruption in daily life of the patient. The avoidance of second procedure may also reduce overall anxiety and can be cost effective too in terms of

surgical fees, pre and post operative medications and materials Holland I.S *et al.;* [4, 5]

All the patients were randomly divided into two groups. Group - I were the patients who underwent one stage removal of impacted lower third molars and Group-II patients underwent two stage removal of impacted lower third molars. Various surgical technique like germectomy, prophylactic odontectomy, buccal coller ,lingual split are available[9] .In present study all the patients, standard incision was used and buccal guttering technique was followed irrespective of the side and the surgical session. Both the groups consisted of twenty patients each, and the various parameters were recorded. With the help of visual analogue scale, anxiety was assessed preoperatively for all the patients. Pain, difficulty in mastication, swallowing and speech were also recorded on visual analogue scale at different intervals of follow-up for the statistical analysis between the two groups. Trismus, swelling, surgical morbidity, days lost out of routine and opinion of the patient for both the groups were recorded and were assessed for the statistical significance.

Anxiety being the main criteria for removal of bilaterally impacted mandibular third molars showed no significant difference between the two groups and it is in accordance with the findings of Holland I.S. *et al.;* [5] who compared the one stage and two stage removal of impacted mandibular third molar and concluded that there was no significant difference between the two groups.

Pain, difficulty in mastication, swallowing and speech showed no statistical significant difference between the two groups. However, the patients of group I experienced pain, difficulty in mastication, swallowing and speech only once as compared to group II which indicates the benefits of removal of bilaterally impacted mandibular third molars in a single visit

Trismus and swelling also showed no significant difference between the two groups. Total mean time required for removing of impacted mandibular third molars was 54 min. and 78 min for group I and group II respectively, showing highly significant difference between the two groups. Similar studies of Holland I.S *et al.;* [5] showed the significant difference between the two groups, the mean total time for one stage was 42 minutes and 54 minutes for the two stage group. In terms of efficiency, the present study showed time as one of the most significant factor. Bilateral removal of impacted mandibular third molars at one visit saved a considerable amount of time as compared to two visit removal of bilaterally impacted mandibular third molars.

The days lost out of routine showed a highly significant difference between the two groups. The mean of group I was 1.75 days as compared to group II which was 3.55 days. The difference noted was due to the fact that after each surgery, patient preferred to rest for atleast one or two days which increased in group II due to the removal of impacted third molars in two visits. Thus, it can be more convenient to the patients if removal of bilaterally impacted third molars is performed in a single visit.

The factors which play important role in deciding whether the one stage or the two stage procedure is best are patient's acceptability, time required for surgery and time saved by the patient in one stage procedure. Considering all these findings of the present study, it seems logical to say that one stage surgical removal of bilaterally impacted mandibular third molars under local anaesthesia is as safe as two stage surgical procedures and bilateral block is absolutely safe.

CONCLUSION

This study concluded that there was no significant difference in parameters of anxiety, pain, and difficulty in mastication, swallowing and speech, mouth opening, swelling, surgical morbidity between the two groups but the patients who underwent removal of bilaterally impacted third molars in two visits had to face all these discomforts twice

However, total time required in both the groups for removal of impacted third molars and the days lost out of routine showed significant difference between these two groups.

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