FACTORS AFFECTING ON THE ONSET AND SEVERITY OF DIFFERENT DEGREES OF POSTOPERATIVE OEDEMA FOLLOWING THE SURGICAL REMOVAL OF UNILATERAL IMPACTED MANDIBULAR THIRD MOLAR

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ABSTRACT

In the present study the different degrees of postoperative oedema following the surgical removal of unilateral impacted mandibular third molar in twenty-five controlled patients under local anesthesia were assessed. To the best of our knowledge postoperative oedema after third molar surgery have not previously been studied in our country in control cases for such a long period. Cheek swelling was recorded by using modification of tape measurement method pre operatively and on POD 1, POD 2 and POD 7. The results of the study showed that post operative oedema after surgical removal of unilateral impacted mandibular third molar is most troublesome to the patients especially on POD 2 when post operative oedema maximized, which may bear a relationship to the patients individual body build and tendency for swelling and the amount of operative trauma inflicted by surgery.

Key Words: Con - Control, Pt - Patients, NS - No Swelling, MI - Mild, MO - Moderate, S - Severe, POD- postoperative day.

INTRODUCTION

Impaction of third molar is a very common complication during its development. The impacted tooth is a pathological entity and should be treated. In minority of cases the treatment of choice is its surgical removal, especially when such teeth give rise to symptom of pain or become foci of infection or when not coming into occlusion.

The post operative complications especially oedema after surgical removal of impacted third Molar which sometime extend towards the neck region may become disastrous for both patients and the surgeon. Although the removal of impacted mandibular third molar is frequently performed both in hospital and general dental practice nowadays, little is known about the onset and severity of this complications.

There is evidence that postoperative oedema reaches its peak on POD 1, but the precise pattern has not been compicated. The present study was designed to ascertain the extent of post operative oedema after third molar surgery on POD 1, POD2 and POD7 respectively, because with this information the clinician will be better able to inform the patients of the potential benefits or risk of retaining the impacted tooth, as the patients are usually scared of pain, trismus and post operative swelling following surgical removal of impacted mandibular third molar which undoubtedly interfere with their social or out door activities for the first two to three days and on the other hand the psychological status of patients prior to this invasive procedure can also be improved, because better informed patients actively participate in treatment and may be more satisfied independent of outcomes.

RESULTS

POD 1

All patients (100%) developed postoperative oedema. Out of 20 patients eleven (55%) developed mild degree,
TABLE-1. DISTRIBUTION OF DIFFERENT DEGREES OF POSTOPERATIVE SWELLING IN CONTROL CASES AFTER MANDIBULAR THIRD MOLAR SURGERY ON POD1, POD2 AND POD7 (n=25)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Degree of swelling</th>
<th>POD1</th>
<th>POD2</th>
<th>POD7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no of pt</td>
<td>%</td>
<td>no of pt</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>No swelling</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Mild</td>
<td>11</td>
<td>55</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>9</td>
<td>45</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Severe</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Graphic distribution showing percentage of different degrees of postoperative swelling after mandibular third molar surgery on POD1, POD2 and POD7

Footnote: Con — Control, NS — No Swelling, MI — Mild, MO — Moderate, S — Severe, POD-postoperative day.

which is in contrast to 9 cases (45%) of moderate degree and (0%) severe degree respectively on POD 1. (Table 1)

POD 2

Again we observed (100%) of patients developed post operative swelling. Six patients (30%) were with mild degree, while 12 case (60%) developed moderate degree which showed (15%) difference between POD 1 & POD 2 and importantly 2 cases (10%) also developed severe degree of swelling on POD 2. It was also observed that the post operative oedema following surgical removal of impacted mandibular third molar maximized and slightly became diffused on POD 2 in majority of patients, i.e., 61%. (Table I)

POD 7

Approximately 5 patient 25% retained mild degree of swelling, but 75% postoperative measurements had returned to the pre operative values on POD7. (Table I)

DISCUSSION

Pain, trismus and swelling are the most common complaints after impacted third molar surgery. Although good surgical technique and good handling of tissues will minimize some pain and oedema but it can not be totally eliminated, and on the other hand post operative swelling is like wise difficult to quantify objectively despite being readily observable. The magnitude of the swelling response is like wise correlated with difficulty of surgery and also bears a relationship to the patients individual body built and tendency for swelling and the amount of trauma inflicted by surgery6 because it reflect the formation of substances such as prostaglandin e2 and bradykinine. According to Charles et al (1995) the post operative oedema following orthognathic surgery reaches its peak level on POD 12, but in this study we observed that the post operative swelling after third molar surgery was at its peak on POD 2, i.e., 61% verses 45% on POD 1. The explanation for this difference is probably the type and duration of surgery, i.e., 186 minutes as compared to 20 minutes in this study. The post operative measurements in their study were also done on photographs using modification of the Hooley and Frances system after taking standard frontal photographs where as in the present study Cheek swelling was recorded clinically from the outer skin surface while teeth in normal intercuspation using a modification of tap measurement method described by Gabka and Matsumara3. We used the modification of tape measurement method because this method is simple, economical and not time consuming and at the same time may provide a direct measurement of post operative swelling after surgical removal of mandibular third molar.

The result of the study show that the post operative oedema following surgical removal of impacted mandibular third molar reaches its peak on POD 2 and 75% of post operative measurements had returned to the pre operative values on POD 7. The severe degree of swelling was not assessable in our study because only two cases 10% of patients developed severe degree of swelling in post operative phase.

CONCLUSION

Post operative oedema following surgical removal of wisdom teeth especially impacted mandibular third molar although is inevitable but many factors which can affect on the degree of post operative swelling following impacted mandibular third molar surgery such as difficulty of impaction, amount of tissue trauma inflicted and skill of surgeon on the degree of post operative swelling can be overcome by increasing the facilities for the oral surgical training at appropriate level and better oral health care to every citizen of this developing county in addition to some other precautionary measures.

REFERENCES