

EVALUATION OF POSTOPERATIVE MORBIDITY FOLLOWING OPERATIONS OF IMPACTED MANDIBULAR THIRD MOLARS WITH BONE RETENTION

Mandibular Yirmi Yaş Dişi Operasyonlarından Sonra Postoperatif Morbiditenin Değerlendirilmesi

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ABSTRACT

This study is aimed to see how gender and whether tooth is placed on the right or left affected the length of the operation, edema, trismus, and discomfort after surgical extraction of an impacted mandibular third molar. This prospective study was conducted in the Inonu University. The study included 104 mandibular wisdom tooth with bone retention. There were 55 females and 49 males among the 104 patients, with 53 left and 51 right impacted mandibular third molar. The operations were performed by the same surgeon in the same operating room. The time between the incision and the suture was determined and recorded as the operation time for each procedure. Before surgery, on the 2nd postoperative day, and on the 7th postoperative day, the patients were compared in terms of facial swelling impacted mandibular third molar, discomfort, and trismus. IBM SPSS V23 was used to evaluate the data. The left impacted mandibular third molar extraction takes longer than the right impacted mandibular third molar extraction. Tooth 38, which have a longer operation time, are more prone to swelling, discomfort, and trismus. When teeth are extracted, right-handed surgeons cause less postoperative morbidity 48. We recommend that both right-handed, left-handed surgeons operate in clinics that conduct impacted tooth extractions.

Keywords: Impacted wisdom surgery, Postoperative morbidity, Right-left impacted mandibular third molar.

ÖZ

Bu çalışmanın amacı; gömülü yirmi yaş dişinin cerrahi çekimi takiben cinsiyetin ve dişin sağda ya da solda olmasının; operasyon süresi, ödem, trismus ve ağrı üzerindeki etkisini değerlendirmektir. Bu prospektif çalışma İnönü Üniversitesinde yapılmıştır. 104 tane kemik retansiyonlu mandibular yirmi yaş dişi çalışmaya dahil edildi. 104 tane hastanın 55'i kadın, 49'u erkektir ve 53 tanesi sol, 51 tanesi sağ mandibular yirmi yaş dişidir. Ameliyatlara aynı cerrah tarafından aynı ameliyathanede gerçekleştirildi. Her ameliyatta insinyonla suture arasındaki süre hesaplanarak operasyon süresi olarak kaydedildi. Hastalar; ameliyat öncesi, ameliyat sonrası 2. gün ve ameliyat sonrası 7. gün de fasiyal şişlik, ağrı ve trismus açısından karşılaştırıldı. Veriler IBM SPSS V23 ile analiz edildi. Sol mandibular yirmi yaş dişinin çekimi sağ mandibular yirmi yaş dişinden daha uzun sürmektedir. Operasyon süresi daha fazla olan 38 nolu dişlerde şişlik, ağrı ve trismus daha çok görülmektedir. Sağ elini kullanan cerrahlar 48 nolu dişlerin çekiminde, daha az postoperatif morbiditeye neden olmaktadır. Gömülü diş çekimlerinin yapıldığı kliniklerde hem sağ elini kullanan cerrahların hem de sol elini kullanan cerrahların çalışmasını önermekteyiz.

Anahtar kelimeler: Gömülü Yirmi Yaş Cerrahisi, Postoperatif Morbidite, Sağ-sol Mandibular Yirmi Yaş Dişi.

INTRODUCTION

Pericoronitis, caries in the unrestorable caries, temporomandibular joint complaints, myofascial discomfort, trismus, orthodontic issues, cystic lesions, and neoplasms can all be caused by impacted mandibular third molar (Liu, Hua, Pan, Han & Tang, 2018). One of the most common operations in oral and maxillofacial surgery is surgical extraction of impacted mandibular third molar (Yuasa & Sugiura, 2004). The impact rate of the impacted mandibular third molar is the greatest of all teeth, including the impacted maksiller third molar (Lima, Silva, Melo, J. A. S. S. Santos & T. S. Santos, 2012). The removal of an impacted mandibular third molar causes traumatic manipulation of bone, connective tissue, and muscle tissues (Marciani, 2007). Tissue injury causes symptoms such as postoperative edema, discomfort, and trismus (Pérez-González, Esparza-Villalpando, Martínez-Rider, Noyola-Frías & Pozos-Guillén, 2018). The inflammatory process generated by the surgical operation is the source of postoperative morbidity (Baloch, Punjabi & Hamid, 2019). Many factors influence the severity of postoperative morbidity. These factors include the surgeon's experience, the patient's age and gender, the presence of systemic disease, smoking and the amount of smoking, compliance with postoperative recommendations, difficulty in the tooth extraction (position of impaction, degree of impaction, relationship with the inferior alveolar nerve (IAN) and presence of pericoronitis), tooth being on the left or right, and operation time (De Santana-Santos et al., 2013; Malkawi, Al-Omiri & Khraisat, 2011)

Patients' postoperative morbidity has a detrimental impact on their quality of life and limits their everyday activities. It has been found that patients with substantial postoperative morbidity have 2-3 times worse quality of life than asymptomatic patients (De Santana-Santos et al., 2013). Aside from postoperative morbidity, surgical removal of the impacted mandibular third molar might result in severe reactions and problems. Bleeding, subsequent infection, alveolar osteitis (dry socket), injury to the next tooth, nerve dysfunction, or mandible fracture are examples of those complications (Benediktsdóttir, Wenzel, Petersen & Hintze, 2004). Surgeons are attempting to reduce postoperative morbidity and avoid adverse reactions, underlining the relevance of this requirement (Tiwana et al., 2005).

The length of the operation plays a significant role in postoperative morbidity following an impacted mandibular third molar. As a consequence of Raprastikul and Pairuchvej's (Rakprasitkul & Pairuchvej, 1997) study, operation time was defined as the time between the start of the incision and the last suture. Multiple tooth extractions, more sutures, and longer

operational periods have all been linked to increased inflammatory tissue reactions (Olmedo-Gaya, Vallecillo-Capilla & Galvez-Mateos, 2002).

The bone around the tooth gets harder and denser with age, so it increases the amount of bone removal and makes it difficult to separate the tooth from the bone (Chiapasco, De Cicco, Marrone, 1993). Postoperative discomfort, edema, and trismus are more common in older patients (Gbotolorun, Arotiba & Ladeinde, 1997). Individuals aged 18 to 29 account for 70% of patients with impacted teeth. With rising age, the likelihood of being impacted reduces inversely. Despite the fact that the rates of impacted teeth are similar across men and women, other research shows that the incidence is higher in women (Celikoglu et al., 2009).

After impacted mandibular third molar surgery, a variety of factors influence postoperative reactions. In our study, we evaluated postoperative morbidity and operation time according to gender and whether the tooth was the right or left. The goal of this study is to see how these factors affect pain, edema, and trismus after impacted mandibular third molar surgery. Despite the fact that similar studies exist in the literature, impartial assessment is insufficient.

MATERIALS AND METHODS

This prospective study was conducted in the Inonu University Faculty of Dentistry Department of Oral and Maxillofacial Surgery. This prospective study was approved with the decision taken by the Inonu University's Scientific Research and Publication Ethics Committee. (Date: January 25, 2022, No: 2022/2963).

Inonu University Faculty of Dentistry Department of Oral and Maxillofacial Surgery performs impacted mandibular third molar procedures on a regular basis. The study comprised 104 patients with bone retention, impacted mandibular third molar extraction indications, and single tooth extraction. Patients accepted to participate in the study after signing an informed consent form that included information about the methodology. Patients were chosen from a group of 15 to 30 year olds with no systemic disorders, no history of pericoronal infection, and no recent anti-inflammatory drug usage. There were 55 females and 49 males among the 104 patients, with 53 left impacted mandibular third molar (tooth 38) and 51 right impacted mandibular third molar taken (tooth 48). Patients above the age of 29, patients under the age of 16, patients with systemic disease, patients undergoing repeated tooth extractions, patients unable to attend postoperative appointments, patients with drug allergies, pregnant patients, and breastfeeding patients were all excluded. Patients who did not take their prescriptions on a

regular basis, did not attend their postoperative checkups, or were found to have little bone retention during surgery were eliminated from the study.

In our study, teeth numbered 48 formed group I, and teeth numbered 38 formed group II. Postoperative morbidity was also examined between the genders in our study. Female patients formed group A and male patients formed group B.

The operations were performed by the same surgeon in the same operating room. All of the patients were scheduled to be treated under local anesthesia, with articaine containing 1:200 000 epinephrine utilized for the IAN and buccal nerve blocks. An incision was made and the mucoperiosteal flap was raised. Low-speed instruments and a spherical burr were used to remove bone and separate the tooth under sterile saline irrigation. The extraction socket was then curated, and the sharp bone edges were smoothed off. All patients were given a written instruction sheet with information about wound care and possible complications in the postoperative period, as well as the prescription and regular use of amoxicillin 875 mg + clavunic acid 125 mg, dexketoprofen, and chlorhexidine digluconate mouthwash.

Evaluation Criteria:

The time between the initial incision and the last suture was determined and recorded as the operation time for each procedure.

Pain, edema, and trismus were assessed after surgery. The change in pain was measured using a questionnaire form that included a visual analogue scale (VAS) between 0 and 10 for pain. The VAS scale questionnaire was used to assess the pain changes of the patients on the second and seventh days after surgery.

The amount of mouth opening was measured at the preoperative and postoperative 2nd and 7th day controls to determine the trismus index. The distance between the mesial-incisal corners of the upper and lower central tooth was measured for this measurement. We calculated the differences between preoperative and postoperative values.

Gabka and Matsumura (Gabka & Matsumura, 1971) used a modified method of tape measurement to assess facial swelling. Three measurements are taken between five reference sites in this procedure. These reference sites are;

A; tragus,

B; soft tissue pogonion,

C; lateral canthus of the eye,

D; labial commissure and

E; angle of mandible

The preoperative, postoperative 2nd day, and postoperative 7th day mean values were determined separately from the preoperative, postoperative 2nd day, and postoperative 7th day mean values (Figure 1). We calculated the differences between preoperative and postoperative values.

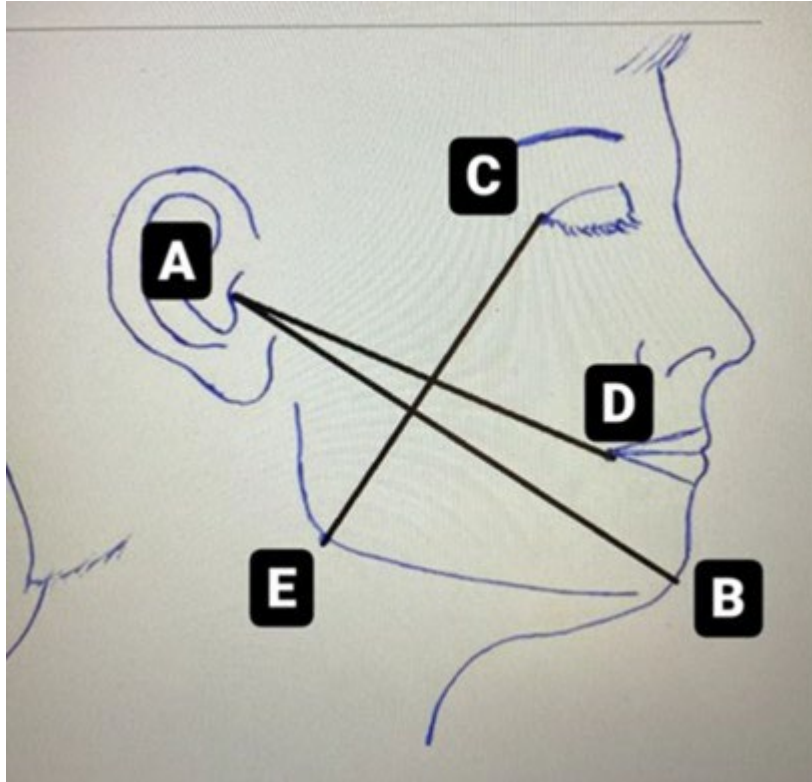


Figure 1. Measured Lengths

Statistical Analysis

International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) V23 was used to evaluate the data. Kolmogorov Smirnov and Shapiro-Wilk tests were used to assess compliance with normal distribution. The Mann-Whitney U test was used to compare data from paired groups that were not normally distributed. The association between non-normally distributed data was investigated using Spearman's rho correlation. To compare VAS levels across time, the Friedman Test was utilized. For multiple comparisons, Dunn's test was utilized. For quantitative data, the findings were reported as mean (\pm) standard deviation and median (minimum – maximum), and for categorical variables, as frequency and percentage. The significance level was taken as $p < 0.05$.

RESULTS

On the second postoperative day, there was no change in the median VAS values according to tooth number ($p = 0.280$). There was no change in VAS median values according

to tooth number on the 7th postoperative day ($p=0.071$). According to tooth number, there was no change in the median values of mouth opening preoperative and postoperative 2nd day (difference) ($p=0.232$). According to tooth number, there was no change in the median values of mouth opening preoperative and postoperative 7th day (difference) ($p=0.367$). According to tooth number, there was a difference in preoperative (difference) median values of edema on the postoperative 2nd day ($p=0.021$). In the number 38 tooth group, the median value was 5.33, while in the number 48 tooth group, it was 4. According to tooth number, there was a difference between the preoperative (difference) median values of swelling on the postoperative 7th day ($p=0.004$). In the 38-numbered tooth group, the median value was 2.67, while in the 48-numbered tooth group, it was 1.33. There was a difference in median operation time values according to tooth number ($p=0.037$). In the 38-numbered tooth group, the median value was 16, while in the 48-numbered tooth group, it was 11 (Table 1).

Table 1. Comparison of VAS Scale, Mouth Opening and Swelling Values According to Tooth Number

	Tooth No				p*
	38		48		
	Average \pm SD	Median (Min. -Max)	Average \pm SD	Median (Min.-Max)	
VAS Scale					
Postop-2	4.70 \pm 2.43	5 (0 - 10)	4.20 \pm 2.74	4 (0 - 10)	0.280
Postop-7	1.98 \pm 2.05	2 (0 - 8)	1.35 \pm 1.74	1 (0 - 7)	0.071
Mouth Opening					
Preop-Postop 2(mm)	17.49 \pm 6.97	18 (5 - 37)	15.86 \pm 5.94	15 (6 - 34)	0.232
Preop-Postop 7(mm)	9.53 \pm 6.14	8 (0 - 26)	8.75 \pm 7.3	7 (-8 - 33)	0.367
Edema					
Postop 2-Preop(mm)	6.03 \pm 3.27	5.33 (0.33 - 14.67)	4.82 \pm 3.23	4 (1 - 17.33)	0.021
Postop 7-Preop(mm)	2.73 \pm 2.49	2.67 (-6.67 - 8.33)	1.86 \pm 2.30	1.33 (-6.67 - 10.33)	0.004
Operation Time(min.)	15.45 \pm 5.28	16 (6 - 28)	13.55 \pm 6.54	11 (5 - 35)	0.037

*Mann Whitney U test; **Friedman test

Women had a median value of 1, while men had a median value of 0. The median VAS readings on the second postoperative day did not change according to gender ($p=0.295$). On the seventh postoperative day, there was no difference in VAS median values by gender ($p=0.115$). There was no difference between the median values of mouth opening on the preoperative and postoperative 2nd day (difference) according to gender ($p=0.232$). There was no difference between the median values of mouth opening at the preoperative and postoperative 7th day (difference) according to gender ($p=0.643$). There was no difference between the preoperative (difference) median values of swelling on the postoperative 2nd day according to gender ($p=0.234$). There was no difference between the preoperative (difference) median values of swelling on the postoperative 7th day according to gender ($p=0.457$). There was no difference between the median values of the operation time according to gender ($p=0.317$) (Table 2).

Table 2. Comparison Of VAS Scale, Mouth Opening and Swelling Values by Gender

	Gender				p*
	Female		Male		
	Average ± SD	Median (Min. -Max)	Average ± SD	Median (Min. -Max)	
VAS Scale					
Postop-2	4.24 ± 2.55	4 (0 - 10)	4.69 ± 2.62	5 (0 - 10)	0.295
Postop-7	1.51 ± 2.04	1 (0 - 8)	1.86 ± 1.78	1 (0 - 6)	0.115
Mouth Opening					
Preop-Postop 2(mm)	17.24 ± 5.87	17 (6 - 37)	16.08 ± 7.16	14 (5 - 34)	0.232
Preop-Postop 7(mm)	9.15 ± 6.53	9 (-8 - 26)	9.14 ± 6.99	7 (0 - 33)	0.643
Edema					
Postop 2-Preop(mm)	5.09 ± 3.27	4.33 (0.33 – 14.67)	5.82 ± 3.30	5.33 (1.67 – 17.33)	0.234
Postop 7-Preop(mm)	2.27 ± 2.44	2 (-6.67 – 8.33)	2.35 ± 2.43	2 (-6.67 – 10.33)	0.457
Operation Time(min.)	14.20 ± 6.42	12 (6 - 35)	14.88 ± 5.48	14 (5 - 26)	0.317

*Mann Whitney U test; **Friedman test; SD: Standard Deviation

The average age was 22.1 years old, and the average surgery time was 14.52 minutes. 52.9% of the people are women, 51% of them have tooth number 38 (Table 3).

Table 3. Descriptive Statistics on Demographic Information

	Average ± Standard Deviation	Median (Min. -Max)
Age	22.1 ± 3.45	22 (17 - 29)
Operation Time	14.52 ± 5.98	13 (5 - 35)
	n	%
Gender		
Female	55	52.9
Male	49	47.1
Tooth No		
38	53	51.0
48	51	49.0

The postoperative 2nd day-preoperative difference value of edema and the surgery time have a statistically significant positive and weak connection ($r=0.228$; $p=0.020$). There is no relationship between other variables ($p>0.050$) (Table 4).

Table 4. The Association Between the Operation's Duration and Preoperative Differences In Swelling and Mouth Opening on The Postoperative 2nd day-preoperative and Postoperative 7th day was Investigated.

	Operation Time	
	r	p
Edema Postop 2-Preop	0.228	0.020
Edema Postop 7-Preop	0.097	0.097
Mouth Opening Preop-Postop 2	0.018	0.858
Mouth Opening Preop-Postop 7	0.090	0.361

r: Spearman's Rho Correlation

DISCUSSION

One of the most common procedures in oral and maxillofacial surgery is the removal of impacted mandibular third molar (Gbotolorun vd, 2007). The removal of the impacted mandibular third molar necessitates more tissue manipulation and bone removal than standard tooth extractions (Freudlsperger, Deiss, Bodem, Engel & Hoffmann, 2012). The most common side effects of impacted mandibular third molar surgery include pain, edema, and trismus. Clinicians are still concerned about post-surgical morbidity. At the same time, this circumstance has a negative impact on patients' quality of life. In our research, as in similar articles, we looked at these variables (Yuasa & Sugiura, 2004). In this study, the severity of the variables was determined solely by tooth number and gender, with surgical methods and other potential factors determining the degree of postoperative morbidity being ignored. Right-handed surgeons, according to our hypothesis, take longer to complete the surgical extraction of tooth 38 than left-handed surgeons. Thus, it is thought that after tooth number 38 is extracted, postoperative morbidity rises.

The frequency of tooth extractions is directly proportional to the amount of postoperative morbidity (Vranckx, Lauwens, Moreno Rabie, Politis & Jacobs, 2021). In those with systemic conditions including diabetes and immune system problems, the wound-healing process is hampered after the extraction of an impacted mandibular third molar. Our study comprised people who had a single tooth pulled and had no systemic illness.

More postoperative morbidity arises after surgical excision of the impacted mandibular third molar, especially in individuals over 35 years of age (Bruce, Frederickson & Small, 1980; de Boer, Raghoobar, Stegenga, Schoen & Boering, 1995; Pérez-González et al., 2018). With the completion of the root formation of the impacted mandibular third molar, bone density increases, periodontal ligament space narrows, and extraction becomes more difficult (Carvalho & Do Egito Vasconcelos, 2011; Chiapasco et al., 1993). The immune system decreases with age, and the inflammatory process lengthens. As a result, discomfort, trismus, and edema all increase with age (Pérez-González et al., 2018). The healing process and symptoms are affected by the administration of postoperative drugs after surgical extraction of the impacted mandibular third molar (Malkawi et., 2011). As a result, we only included people between the ages of 15 and 30 in our research. Following the operation, the patients were given the same medications. The study eliminated patients who did not take their drugs regularly.

The process in pain physiology starts with the activation of specialized receptors (A δ fibers and C fibers) called nociceptors by the stimulus that can cause pain, and is carried by the

receptors to the areas in the cortex responsible for emotional and cognitive pain formation. In painful situations, people act differently. Some people are sensitive, while others are strong. This condition, called the pain threshold, is a characteristic of the body. The pain threshold is influenced by a person's cultural features, environment, lifestyle, education, gender, and religious beliefs. As a result, pain is both subjective and psychological. The VAS is the most objective way to assess pain. VAS was first used in the literature by Huskisson (Berge, 1988; Scott & Huskisson, 1979) in 1974. Unlike other evaluations, VAS is a precise and validated measurement (Barbosa-Rebellato, Thomé, Costa-Maciel, Oliveira & Scariot, 2011).

Every surgical procedure causes physical harm to the tissues and results in an inflammatory response. Blood flow to the area increases during an inflammatory reaction when vasodilation occurs after a brief period of vasoconstriction. Protein-rich inflammatory exudate travels between tissues as vascular permeability increases, causing edema (Schultze-Mosgau, Schmelzeisen, Frölich & Schmele, 1995). To objectively evaluate postoperative edema, various procedures have been used. These are; visual inspection, Cone-Beam Computed Tomography (CBCT), ultrasound, measurement of anatomical points on the face and some other techniques (Amarillas-Escobar ED, et al. 2010; Berge, 1989; Gay-Escoda, Gómez-Santos, Sánchez-Torres & Herráez-Vilas, 2015; Rana et al., 2011; Van Der Meer, Dijkstra, Visser, Vissink & Ren, 2014; Yamamoto et al., 2016). In our study, as in a similar article, we evaluated the swelling with measurements made using 5 reference points of the face (Gabka & Matsumura, 1971). This test is easier to administer, quicker to complete, and more comfortable for the patient.

The inflammatory reaction after surgical extraction of an impacted mandibular third molar affects the masticatory muscles, particularly the masseter and medial pterygoid muscles. The development of spasm in the chewing muscles leads to a restriction in mouth opening (trismus) (Schultze-Mosgau et al., 1995). The simplest way to objectively assess the extent of trismus is to use a paper ruler to measure the distance between the maxillary and mandibular incisors at maximal mouth opening (Mocan A, Kişnişci & Üçok, 1996).

Following surgery, there is a strong link between trismus, discomfort, and edema. The edema that develops after the surgical extraction of an impacted mandibular third molar reaches its peak on the second or third postoperative day, and in most cases, it disappears by the seventh day (Bamgbose et al., 2005). The discomfort experienced following impacted mandibular third molar surgery peaks after 24 hours, lasts for 2-3 days, and then fades away by the seventh day (Baloch et al., 2019). Trismus that develops after surgical extraction of an impacted mandibular third molar reaches its peak on the first and second days, and is normally gone by the seventh day (Moore, Brar, Smiga & Costello, 2005). We measured the degree of pain, edema, and

trismus experienced by the patients before the procedure, as well as on the 2nd and 7th days afterward.

The length of the operation is the most important factor in determining the difficulty of surgical procedures (Benediktsdóttir et al., 2004). The amount of edema, discomfort, and trismus that develops after surgery is related to the length of surgery (De Santana-Santos et al., 2013). At the same time, increasing the duration of surgical operation was found to increase the stress of the individual (Suleiman et al. 2021). As a result of our research, right-handed physicians take longer to complete the surgical extraction of the 38th tooth than they do for the 48th tooth. The larger the tissue injury and released mediator, the longer the operation time (Benediktsdóttir et al., 2004). This is due to an increase in surgical trauma and intraoperative complications. In a study conducted in 2022, the right-left impacted mandibular third molar was compared using Pederson's difficulty index. There was no difference in the difficulty of the right-left impacted mandibular third molar (Jeyashree & Kumar 2022). In another study, the complications that occurred after impacted mandibular third molar extractions of the right and left regions were compared. Pain in the left region, loss of sensation in the lip and tongue, alveolitis, secondary bleeding, swallowing problems and opening problems at the edge of the wound were found to be higher compared to the right region. In edema and trismus, no differences were detected (Akbulut et al. 2010). However, our study has shown that with an increase in the duration of surgery for left impacted mandibular third molar extraction, it results in a higher VAS score, more swelling and less mouth opening.

In impacted mandibular third molar surgical operations lasting longer than 30 minutes, it is more difficult and postoperative morbidity is expected more (Lambade, Dawane, & Mali 2023). In our study, it was seen that there was a longer operation time in the left mandibular third molar. The 38th tooth extraction caused more discomfort and reduced mouth opening than the 48th tooth extraction, according to our findings. In our research, tooth extraction number 38 caused higher edema on the second postoperative day than tooth extraction number 48. On the seventh postoperative day, the amount of edema in tooth 38 was somewhat higher, although this was not significant. The explanation for this is that the patients' symptoms began to fade on the seventh day (Xue et al., 2015). It may be considered to perform a coronectomy during mandibular third molar surgical extraction that will last a long time, especially in the left jaw and close to the nerve. In the studies conducted, there was no difference in terms of coronectomy and removal of the entire tooth (Singh et al. 2018).

In the studies conducted, steroid use after impacted mandibular third molar surgery reduces postoperative morbidity (Laureano Filho et al. 2008; Priyanga, Balamurugan, & Rajan

2022). In our study, it was seen that the surgical operation of the left impacted mandibular third molar was longer. Due to the long duration of the operation, more morbidity was observed in the left impacted mandibular third molar shot. Thus, steroid use can be considered, especially in left-impacted mandibular third molar shots.

The influence of gender on postoperative morbidity following a hidden 20-year-old procedure was investigated in our study. According to certain research, women undergo third-molar surgery more frequently than men (De Santana-Santos et al., 2013). According to Osunde and Saheeb's study, postoperative morbidity was shown to be higher in women than in men (Osunde & Saheeb, 2015). The percentage of women who use oral contraceptives has risen in recent years. In the coagulation mechanism, oral contraceptive medications produce early fibrinolysis. Because it causes early fibrinolysis, it generates greater alveolar osteitis and causes more postoperative pain. Postoperative morbidity is higher in men than in women, according to the findings of a study done by Yuasa and Sigiura². The fact that men have thicker mandible bones than women suggests that more postoperative morbidity will occur (Nakagawa et al., 2007). Our findings back up Chiu and Cheung's research, which demonstrated no difference in postoperative morbidity between men and women after surgery (Chiu & Cheung, 2005).

CONCLUSION

According to the findings of this study, left-impacted mandibular third molar extraction takes longer than right-impacted mandibular third molar extraction. Tooth 38, which has a longer operation time, is more prone to swelling, discomfort, and trismus. Given that the doctors in our study are right-handed, we suggest that both right-handed and left-handed surgeons collaborate to reduce postoperative morbidity in clinics where impacted tooth extractions are performed often.

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