

University of Mosul
College of Dentistry



**Efficacy of Ozonated Olive Oil Gel on
Healing Potential after Impacted Lower
Third Molar Extraction
(Split-Mouth Study)**

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M.Sc. / Thesis

In

Oral and Maxillofacial Surgery

Supervised By

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ABSTRACT

Background: Third molar surgical extraction is considered the most frequent surgical intervention in our department. Several common complications are associated with such intervention including persistent pain, trismus, and swelling. Patient variables, including age and sex, the level of tooth impaction, surgical procedures employed, and operator proficiency, serve as risk factors for postoperative problems. Various oral medications to manage inflammatory complications following third molar surgeries were utilized.

Aims: Assess the effects of Ozonated Olive Oil Gel on pain, trismus, swelling, and quality of life measurements after lower third molar surgical extraction to be used as an adjunctive treatment.

Materials and methods: 10 healthy males, aged 18 to 35 years, had their bilaterally impacted mandibular third molars surgically extracted (2 weeks between each side). Gel foam (1cm) was administered alone to the control side (right) of the oral cavity, whereas 1 cc of ozonated gel was added to the gel foam on the study side (left). During the 1st, 3rd, and 7th days following surgery, postoperative evaluations of pain, swelling, trismus, and quality of life were done.

Results: Comparisons between ozone and controlled groups showed that pain was significantly reduced in ozone group on days 1, 3, and 7 after treatment (p-values 0.001, 0.001, and 0.007 respectively). Swelling and edema were also significantly reduced in ozone group on days 1 and 3 (p-value 0.021 and 0.018 respectively). Accordingly, quality of life with ozone therapy significantly improved every day post-surgery (p-value 0.003,

0.031, and 0.022 respectively). Despite the previous desirable effects; ozone gel's effect on the mouth opening was negligible.


Conclusions: Ozone therapy effectively can reduce postoperative pain and improve overall quality of life. Moreover, ozone gel can effectively reduce postoperative swelling and edema after third molar surgery; yet without considerable effects on trismus. Therefore, ozone gel might be considered a valuable medication to reduce such postoperative symptoms.

Efficacy of Ozonated Olive Oil Gel on Healing Potential after Impacted Lower Third Molar Extraction (Split-Mouth Study)

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HIGHLIGHTS	GRAPHICAL ABSTRACT
<ul style="list-style-type: none"> • Comparisons between ozone and controlled groups showed that pain was significantly reduced in the ozone group on days 1, 3, and 7 after treatment (p-values 0.001, 0.001, and 0.007, respectively). • Swelling and edema were also significantly reduced in the ozone group on days 1 and 3 (p-value 0.021 and 0.018, respectively). • quality of life with ozone therapy significantly improved every day post-surgery (p-value 0.0030, 0.031, and 0.022, respectively). • Ozone gel's effect on the mouth opening was negligible 	 <p>The graphical abstract consists of four images: 1) An intraoperative view of a surgical procedure on a lower third molar. 2) A white jar of 'NATURE'S Fully Ozonated Organic Extra Virgin Olive Oil Gel' with a website URL and volume information. 3) A pair of hands in blue gloves applying a gel to a dental instrument. 4) A collection of dental instruments laid out on a white surface, with a small jar of the gel and a white gauze pad nearby.</p>
<p>Keywords:</p> <p>Ozonated Trismus Edema Gel foam Olive oil Split-mouth Quality of life (QOL) Mandibular third molar Impaction</p>	<p>ABSTRACT</p> <p>Background: Third molar surgical extraction is considered the most frequent surgical intervention in our department. Several common complications are associated with such intervention including persistent pain, trismus, and swelling. Patient variables, including age and sex, the level of tooth impaction, surgical procedures employed, and operator proficiency, serve as risk factors for postoperative problems. Various oral medications to manage inflammatory complications following third molar surgeries were utilized. Aims: Assess the effects of Ozonated Olive Oil Gel on pain, trismus, swelling, and quality of life measurements after lower third molar surgical extraction to be used as an adjunctive treatment. Materials and methods: 10 healthy males, aged 18 to 35 years, had their bilaterally impacted mandibular third molars surgically extracted (2 weeks between each side). Gel foam (1cm) was administered alone to the control side (right) of the oral cavity, whereas 1 cc of ozonated gel was added to the gel foam on the study side (left). During the 1st, 3rd, and 7th days following surgery, postoperative evaluations of pain, swelling, trismus, and quality of life were done. Results: Comparisons between ozone and controlled groups showed that pain was significantly reduced in ozone group on days 1, 3, and 7 after treatment (p-values 0.001, 0.001, and 0.007 respectively). Swelling and edema were also significantly reduced in ozone group on days 1 and 3 (p-value 0.021 and 0.018 respectively). Accordingly, quality of life with ozone therapy significantly improved every day post-surgery (p-value 0.003,0.031, and 0.022 respectively). Despite the previous desirable effects; ozone gel's effect on the mouth opening was negligible. Conclusions: Ozone therapy effectively can reduce postoperative pain and improve overall quality of life. Moreover, ozone gel can effectively reduce postoperative swelling and edema after third molar surgery; yet without considerable effects on trismus. Therefore, ozone gel might be considered a valuable medication to reduce such postoperative symptoms. 2025 M.Sc. Thesis @Univ. of Mosul, College of Dent., Cons. Dent. Dept. (https://www.uomosul.edu.iq/).</p>



جامعة الموصل
كلية طب الاسنان

فعالية جل زيت الزيتون المعالج بالأوزون على
إمكانية الشفاء بعد قلع الرحي الثالثة السفلية
المطمورة جراحياً (دراسة قسمة الفم)

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الخلاصة

المقدمة: يُعد قلع ضرس العقل إجراءً جراحياً شائعاً في طب الاسنان يمكن أن يؤدي إلى الألم، التورم، وتقييد الوظائف الفموية بعد العملية، مما يؤثر سلباً على جودة حياة المريض. لذلك، تُعد الرعاية الفعالة بعد الجراحة ضرورية لتخفيف هذه المشكلات وتعزيز التعافي. يُعتبر جل زيت الزيتون المعالج بالأوزون عاملاً علاجياً واعدًا في العديد من التطبيقات الطبية وطب الأسنان، نظراً لخصائصه المضادة للبكتيريا والمضادة للالتهابات وقدرته على تسريع التئام الجروح.

الهدف من الدراسة: تهدف الدراسة إلى تقييم ما إذا كان جل زيت الزيتون المعالج بالأوزون يساهم في تحسين جودة الحياة وتقليل الألم والورم وقابلية فتح الفم بعد الجراحة لاستخراج الضرس الثالث السفلي المظمور.

المواد والطريقة: شارك في الدراسة عشرة ذكور بالغين أصحاء، تتراوح أعمارهم بين ١٨ و ٣٥ عاماً، خضعوا لعملية جراحية لاستخراج الضرس الثالث السفلي المظمور على جانبي الفم. تم استخدام جل الفوم وحده في الجانب الأيمن من الفم (المجموعة الاولى)، بينما تم إضافة ١ سم مكعب من جل زيت الزيتون المعالج بالأوزون إلى جل الفوم في الجانب الأيسر (المجموعة الثانية). أُجريت التقييمات بعد العملية في اليوم الأول، الثالث، والسابع لتحديد مستوى الألم والورم وقابلية فتح الفم وجودة الحياة .

النتائج: أظهرت مجموعة الأوزون انخفاضاً ملحوظاً في مستويات الألم في اليوم الأول والثالث والسابع بفارق ذا دلالة احصائية مقارنة بالمجموعة الاولى. كما وكان الاوزون فعالاً في تقليل الورم في اليوم الاول والثالث بفارق ذا دلالة احصائية غير انه لم يكن هناك فرق ذا دلالة احصائية بين المجموعتين فيما يخص تشنج عضلات الفك وتحديد فتحة الفم بالإضافة إلى ذلك، حققت مجموعة الأوزون تحسينات كبيرة في جودة الحياة يومياً بعد الجراحة مقارنة بالمجموعة الاولى وكان هناك فرق ذا دلالة احصائية.

الاستنتاجات: يُمكن للعلاج بالأوزون أن يُخفف الألم بعد الجراحة ويُحسّن جودة الحياة بشكل عام. علاوة على ذلك، يُمكن لجل الأوزون أن يُقلل التورم والوذمة بعد جراحة الضرس الثالث بفعالية، ولكن دون آثار تُذكر على تشنج عضلات الفك وتحديد فتحة الفم. لذلك، يُمكن اعتبار جل الأوزون دواءً قيماً لتخفيف أعراض ما بعد الجراحة.