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Quality of life after upper third molar removal.

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INDEX

1.- ABSTRACT

1.2.- Spanish version

Objetivo: El Objetivo principal del estudio fue evaluar la calidad de vida (CdV) y el grado de satisfacción de los pacientes que se sometieron a extracciones de terceros molares superiores bajo anestesia local. El segundo objetivo fue describir la evolución del dolor descrita por los pacientes mediante la escala analógica visual durante los siete días postoperatorios y correlacionarlo con los factores pre- e intraoperatorios.

Diseño del estudio: Estudio longitudinal prospectivo. Treinta y siete pacientes recibieron el cuestionario sobre aislamiento social, aislamiento laboral, habilidad para comer, modificaciones en la dieta, habilidad para hablar, dificultades para dormir, apariencia física, dolor e incomodidad al retirar la sutura y satisfacción con el tratamiento pasados 7 días desde la extracción. Mediante la escala analógica visual (VAS) de 100mm de longitud, los pacientes marcaron cada día, durante siete días, cuál fue su dolor promedio.

Resultados: Treinta pacientes rellenaron correctamente los cuestionarios. Las puntuaciones de dolor reportadas después de 7 días mostraron una reducción progresiva y lineal del dolor. Durante el segundo y tercer día fue cuando hubo una reducción significativamente mayor del dolor. Se observó una asociación positiva entre técnica quirúrgica, grado de erupción, patología previa en el molar, complicaciones durante la intervención y mayores niveles de dolor postoperatorio. La inflamación fue el cambio más importante reportado por los pacientes.

Conclusión: La extracción del tercer molar superior afectó significativamente la calidad de vida y de relación de los pacientes sobre todo durante los 2 primeros días.

1.2. - English version

Objective: The aim of this study was to evaluate the quality of life (QoL) and degree of satisfaction of patients undergoing extraction of an upper third molar under local anesthesia. A second objective was to describe the evolution of self-reported pain measured in a visual analogue scale (VAS) in the seven days after surgery and the relationship with pre- and intraoperative factors.

Study design: Prospective longitudinal study. Thirty-seven patients received the questionnaire assessing social isolation, working isolation, eating ability, diet modifications, speaking ability, sleep impartment, physical appearance, discomfort at suture removal and overall satisfaction on day 7 after surgery. A 100-mm visual analogue scale (VAS) of pain was scored by the patients every day from extraction until day 7.

Results: thirty patients filled the questionnaire correctly. The VAS score for pain across the 7 days showed a progressive reduction in pain intensity with a clear linear pattern. Day 2 and day 3 patients experienced a statistically significant reduction of pain. A positive association was observed among surgical technique, eruption molar side with previous pathology, intraoperative complications and higher postoperative pain levels. Swelling was the most important change reported.

Conclusions: Upper third molar removal affects patient quality of life and social relationship significantly, particularly during the first two days after extraction.

2.-INTRODUCTION

The term quality of live (QoL) describes a multidimensional concept concerning the ability of the patients to carry out their daily activities. [1, 2, 3]

QOL is a concept difficult to be assessed considering that the result might have differences depending on the perception of the treated person. However, the questionnaires to assess QoL are designed to measure the quality, the effectiveness and the efficiency of the treatment methods as well as physical, psychological and social consequences of patients with the different health states. [2]

Most people require the extraction of the third molar at some time in life mostly due to pain, tooth decay or periodontal disease. Therefore, third molar extraction is still one of the most frequent interventions in oral surgery. [2, 3, 4]

Pericoronitis is the most frequent indication for the extraction of third molars.[5] Furthermore, there are other indications, such as preventive or prophylactic indications (which take into account possible future complications), infection, orthodontic, restorative or prosthetic reasons or the presence of concomitant pathology. [6]

The current opinion about personal state of health after the extraction of third molars is influenced by a set of variables: age, gender, degree of eruption, bone retention , previous symptoms, or surgical technique, surgeon's experience and tooth position. [1]

The upper third molar extraction can be surgical or nonsurgical, may require tooth sectioning or not and may be performed using different flap designs. There are also different postoperative antibiotic regimens. [6]

Due to the many indications to extraction, the third molar extraction is the most common surgery in the oral cavity. Currently, there is a great availability of scientific publications describing the various treatment options, as their extraction or control only, although there is not a consensus treatment yet.

As in any surgery, the surgical approach for the extraction of the upper third molar produces damage on the patient's tissues. [7, 8] It has an impact both at local and

systemic level that deteriorates the QoL of the patient. There is little information related to the extension of the damage and therefore patients and clinicians can only rely on clinical experience to predict. People who undergo surgical treatment for extraction of third molars suffer alterations in their daily routine, mainly produced by pain and inflammation. [7, 9, 10]

However, every day there are more studies evaluating the influence on the QoL of patients during the postoperative period after undergoing different treatments of oral surgery. [1, 2, 8, 11] To date, there is no information on the impact on QoL in the postoperative course after extraction of the upper third molars.

The main objective of this report was to measure the QoL for the first 7 days after the removal of a third upper molar, using a previously validated questionnaire.

The secondary objective was to measure the degree of satisfaction in the outpatients undergoing the extraction of the third upper molars using a validated questionnaire, to assess the evolution of the postoperative pain during the first 7 days after the extraction and to describe the need for analgesic consumption.

3. - MATERIAL AND METHODS

Patients who had an appointment to extract an upper third molar at the Master of Oral Surgery and Orofacial Implantology of the University of Barcelona were recruited for the study.

Exclusion criteria were: systemic diseases (ASA III or higher) that contraindicate surgery or alter the wound healing , patients with antibiotic premedication or under any pharmacological treatment that interferes with the wound healing , patients with contraindications of the extraction, patients who are on chronic NSAID therapy , patients in whom is contraindicated the administration of medication or the local anesthesia of the study protocol, patients who are not able to understand the visual analogue scales or the questions related to the QOL. Inclusion criteria were: patients older than 18 years old and patients in whom extraction of third molars is indicated.

The study protocol was approved by the Institutional Review Board (Comitè Ètica d'Investigació Clínica HOU-UB). Patients signed an informed consent for the participation in this study.

The variables registered were : age , gender, the side of the third molar, eruption status, bone retention, previous symptoms, bone removal, tooth sectioning, experience of the surgeon, and intraoperative complications such as mucosal tear, tuberosity fracture or oroantral communication. The average pain for each day on a 10 cm visual analogue scale (VAS) and the number of analgesic or nSAID pills taken was collected.

The same day of the surgery, the patient received the questionnaires and the visual analogue scales and was instructed about how and when to fill it.

Seven days after surgery the patient attended the clinic for suture removal. At this time, the completed questionnaire with information about pain and postoperative quality of life was collected and another questionnaire was in situ filled by the patient.

The data were processed using IBM SPSS version 22.0 (IBM Corp; Armonk, NY, USA).

T tests were used in order to compare the duration of the changes (in days) depending on gender and occupation. However, when the comparison was set with the degree of surgical difficulty, one-way ANOVA for test were used.

The association of pain with genders was measured by χ^2-test by Pearson. The pain VAS scores were analyzed by analysis of variance (ANOVA) for repeated measures with Greenhouse-Geisser correction.

4. - RESULTS

Questionnaires were delivered to 37 patients. Thirty returned the questionnaires (28 females and 12 males). Seven patients who either lost the questionnaire or failed to complete it correctly were excluded from the study. The mean age was 29,1 years SD of 9,3. All patients were Caucasian. The most frequent eruption side was total eruption. *Table 1* displays the distribution of demographical variables and variables of the surgery. Questionnaire results are shown on *Table 2* and *Table 3. Table 2* shows the results of: Questionnaires completed on day 7 after surgery. And *Table 3* displays the results of: Questionnaires filled after suture removal (day 7).

Table 1.Demographic and operative data of test and control groups

Gender		
Male	12	40%
Female	18	60%
Medication		
Anxiolytics	3	10%
Antidepressant	6	20%
Previous pathology		
Yes	15	50%
No	15	50%
Eruption side		
Total eruption	15	50%
Partial eruption	11	36,70%
Total retention	4	13,30%
Technique		
Ostectomy	17	56,70%
Tooth sectioning	1	3,30%
Ostectomy and tooth sectionig	2	6,70%
No ostectomy / no tooth sectionig	10	33,30%
Surgeon's experience		
First year	28	93,33%
Second year	1	3,33%
Third year	1	3,33%
Complications		
Tuberosity fracture	3	10%
Mucosal tear	5	16,66%
No complications	22	73,33%

Table 2. Questionnaire completed on day 7 after surgery.

Social isolation			No	Yes
¿Did you keep your usual social activities?			27%	73%
¿Have you continued practicing your favorite sport or hobbies?			40%	60%
¿Did you feel pain and/or swelling?			43%	57%
¿Did you notice changes in your physical appearance?			73%	27%
¿Did you feel changes in your mood?			80%	20%
¿Did you feel malaise?			73%	27%
Working isolation			**No**	**Yes**
Did you ask for sick leave or discontinue your work?			93%	7%
Did the extraction affect your performance at work?			87%	13%
Did somebody accompany you?			53%	47%
Has this person discontinued his/her work to do so?			83%	17%
Eating ability and diet variations	**Not at all**	**A little**	**Quite a lot**	**Very much**
Did you continue with your usual diet?	23%	40%	10%	27%
Did you notice any change in the perception of taste?	53%	20%	27%	0%
Did you notice any change in chewing ability?	30%	30%	33%	7%
Did you have problems opening your mouth?	43%	30%	7%	20%
Speaking ability noticed	**Not at all**	**A little**	**Quite a lot**	**Very much**
Have you notice any change in voice?	77%	20%	0%	3%
Have you notice any change in your ability to speak?	63%	30%	3%	3%
When you talk with other people, do they understand you?	67%	23%	7%	3%
Sleep impairment	**Not at all**	**A little**	**Quite a lot**	**Very much**
Have you had problems falling sleep?	73%	23%	3%	0%
Have you experienced interruptions in sleep?	67%	30%	0%	3%
Have you felt drowsy?	70%	20%	3%	7%
Physical appearance			**No**	**Yes**
Have you noticed changes in your physical appearance?			63%	37%
Is it what you expected?			23%	77%

Table 3. Questionnaire filled after suture removal (day 7).

Pain and disconfort at suture removal	Not at all	A little	Quite a lot	Very much
Has the removal of suture been uncomfortable?	50%	43%	7%	0%
Has the appointment for suture removal caused you anxiety?	67%	30%	3%	0%

Mean duration of the quality of life alterations	No	Yes
Are you satisfied with the treatment?	7%	93%
Would you recommend it?	13%	87%
Would you repeat it?	20%	80%
Do you feel that the problem causing you seek treatment has been solved?	7%	93%

The VAS score for pain across the 7 days showed a progressive reduction in pain intensity (F=25,45; degrees of freedom (df)=2,32; P<0,0001). However on day 2 and day 3 patients experienced a statistically significant reduction of pain (day 2 compared with day 3 and 4: P=0,045; P=0,016) with a global means of 18,64mm and 10,84mm. (*Table 4)*

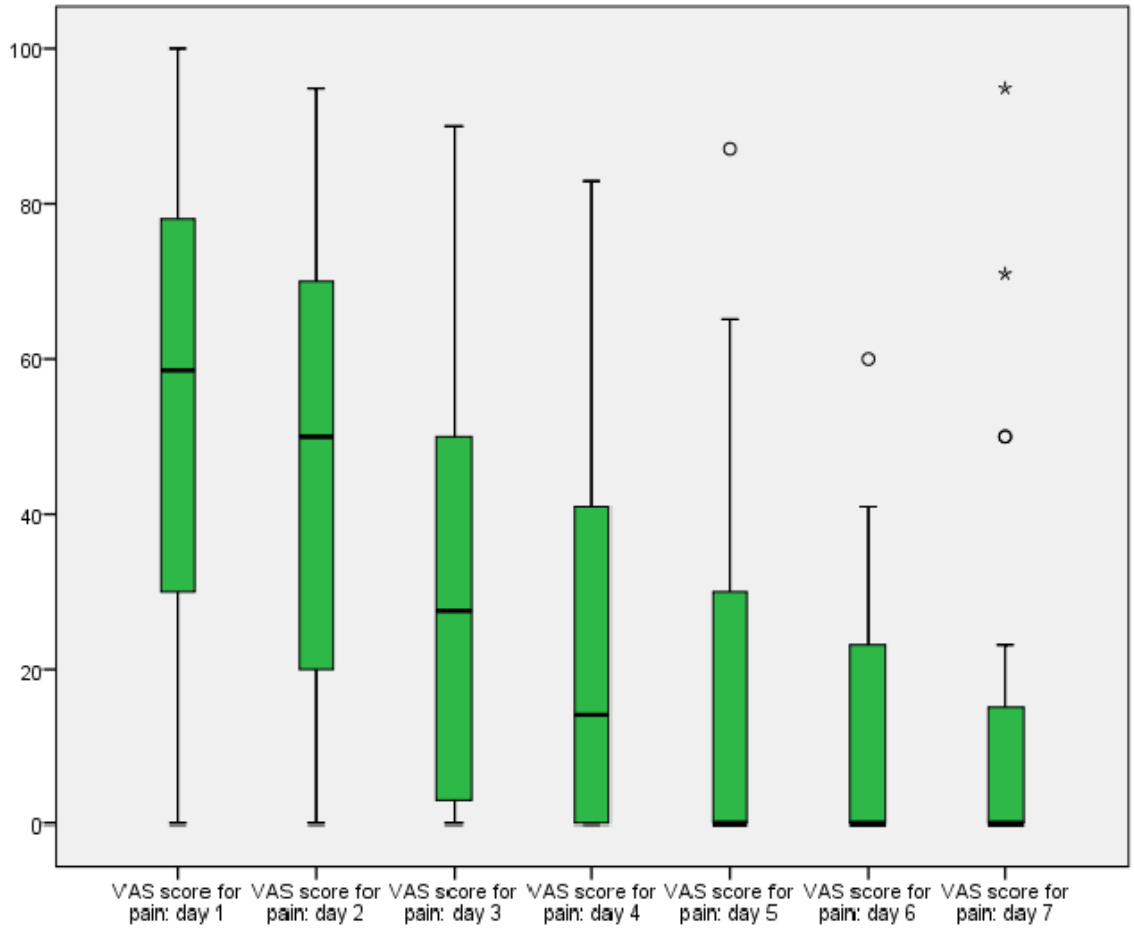
Graphic 1 displays the evolution of the self-reported VAS of pain during the postoperative period. The vertical axis represents VAS scores (from 0 to 100 mm). Circles represent outlier values. Asterisks represent extreme values. The graphic shows outliers with persistent pain on day 5 to 7, and an overall lineal reduction of pain.

Men yielded slightly higher pain VAS scores than women, although the difference was non-significant (F=0,02; df=1; P=0,97,), though the rate of decrease in VAS score across time was similar in both genders. *(Table 5)*

Table 4. Estimated marginal means. Pain.

Pain	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	57,478[a]	4,369	47,148	67,808
2	52,457[a]	2,748	45,960	58,953
3	33,804[a]	4,516	23,125	44,484
4	22,957[a]	3,674	14,269	31,644
5	18,109[a]	2,988	11,043	25,174
6	11,435[a]	2,444	5,656	17,213
7	11,957[a]	2,702	5,568	18,345

Graphic 1.



Patients who had had previous symptoms associated with their third molars yielded higher VAS scores than with non-symptomatic third molars *(Table 6)* , although the difference was non-significant (F=0,221; df=1; P=0,52).

Patients who had total retention of their third molar had higher VAS scores than those with partially or totally erupted molars (*table 7*), pattern of pain reduction was similar (F=11,30; df=2 P=0,06).

When the ostectomy and tooth sectioning was performed, patients presented higher VAS scores than without ostectomy and odontosection (Table 8), (F=7,05; df=2; P=0,021) . Patients who had intraoperative complications such as tuberosity fracture had higher VAS scores than patients without complications (F=6,20; df= 2; P=0,02) (Table 9).

Table 5. Estimated marginal means. Gender

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
male	31,336	3,644	22,719	39,952
female	28,516	3,028	21,357	35,676

Table 6. Estimated marginal means. Presence of previous pathology.

Molar with previous pathology	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Yes	33,136	3,313	25,303	40,970
No	22,643	3,280	14,887	30,399

Table 7. Estimated marginal means. Eruption molar side

Eruption side	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Total eruption	23,693	3,327	15,827	31,559
Partial retention	23,810	3,817	14,783	32,836
Total retention	58,214	6,073	43,853	72,576

Table 8. Estimated marginal means. Surgical technique.

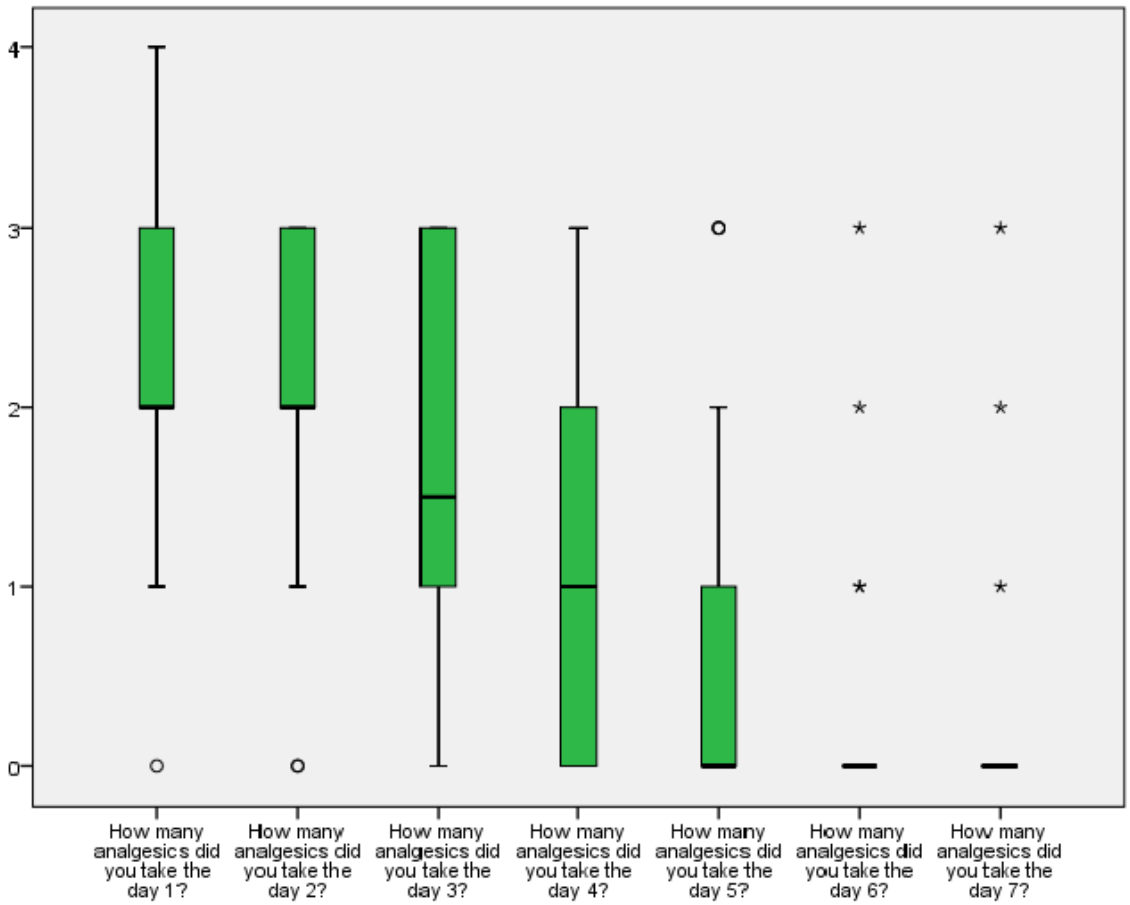
What is the surgical technique?	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Ostectomy	34,561	3,068	27,308	41,815
Tooth sectioning	15,571	12,147	-13,151	44,294
Ostectomy and tooth sectioning	39,643	8,589	19,333	59,953
No ostectomy/ tooth sectioning	9,583	4,049	,009	19,158

Table 9. Estimated marginal mean. Intraoperative complications.

Have it been intraoperative complications?	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Tuberosity fracture	45,810	7,013	29,227	62,392
Mucosal tear	34,071	5,681	20,638	47,505
No complications	25,647	2,737	19,175	32,120

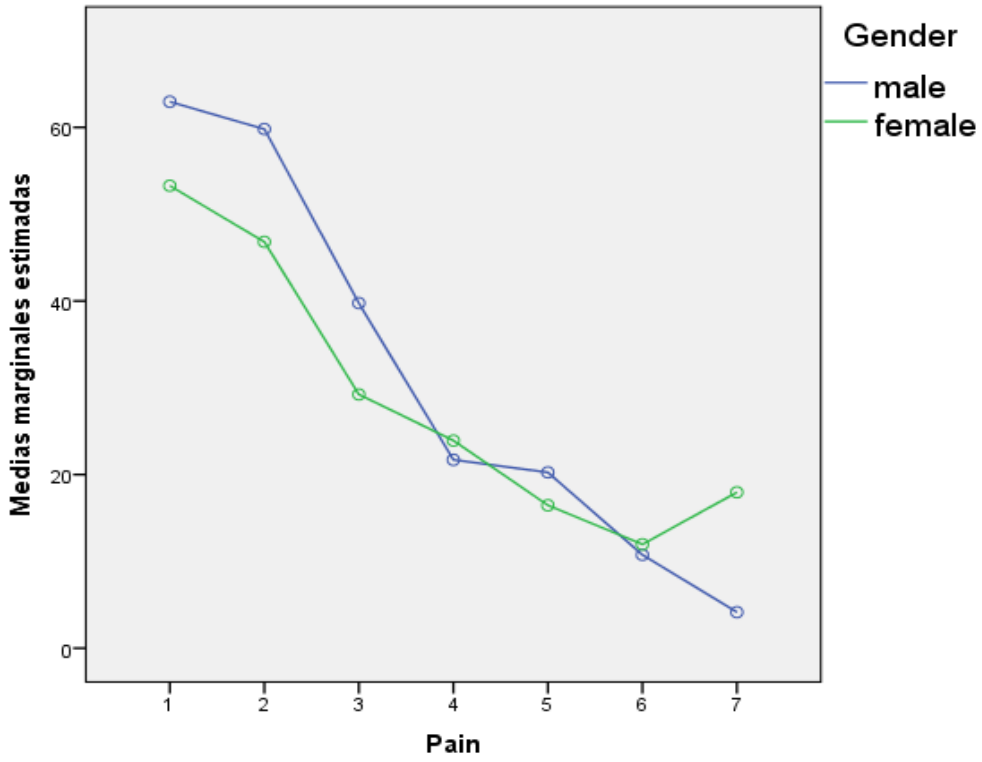
The boxplot's graphic (graphic 2) shows how many analgesics have been taken by the patients. On day 6 and 7 there are outliers.

Graphic 2



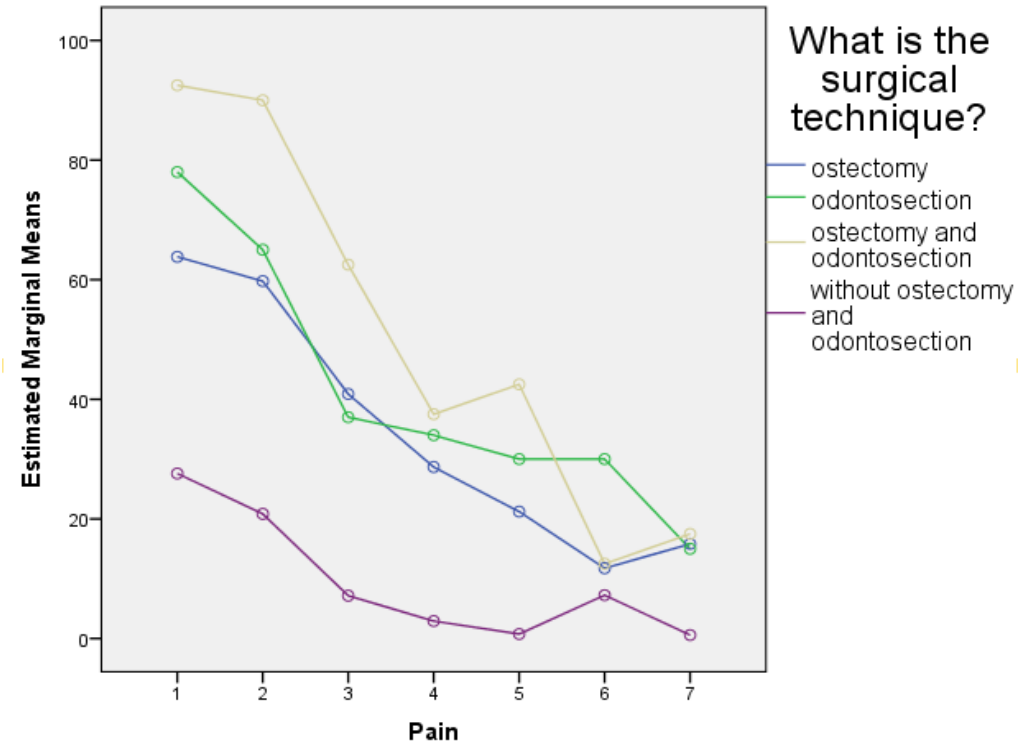
Pain differences by gender were not significant, but slightly higher in men than in women, although the pattern of decline was similar in both cases, as we can see in *Graphic 3*. On the other hand, there is another study of lower third molar extraction where women reported higher pain. [1] Our results show more similitude with another study under conscious sedation where there were no in pain differences between men and women. [2]

Graphic 3.



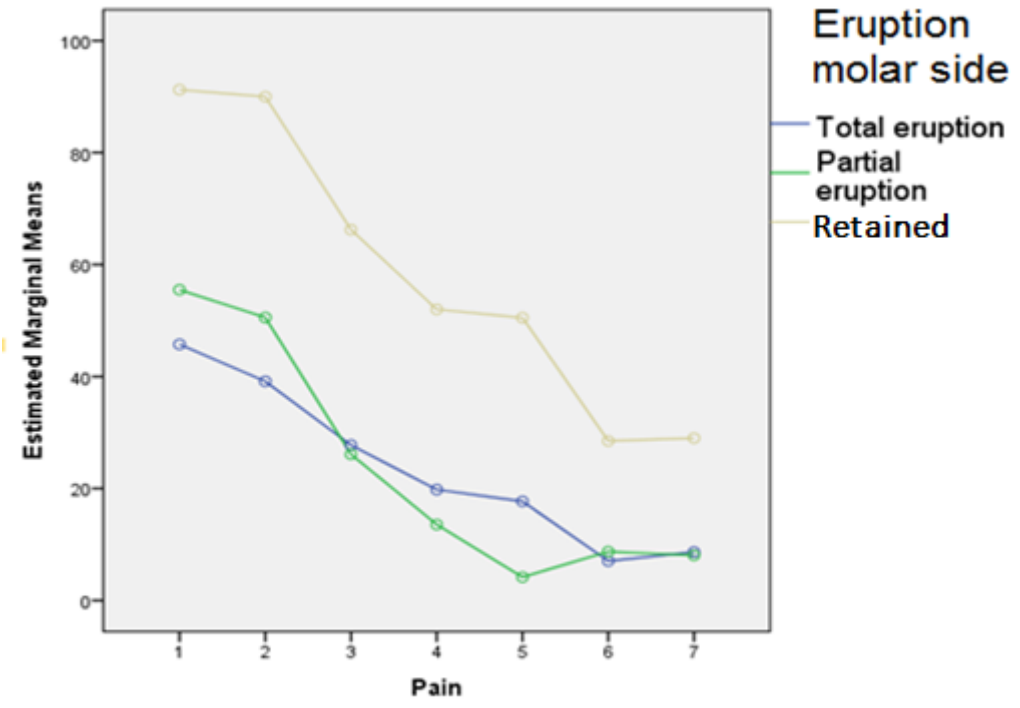
Pain scores were significantly lower when neither ostectomy nor tooth sectioning was performed, as it is shown in Graphic 4.

Graphic 4.



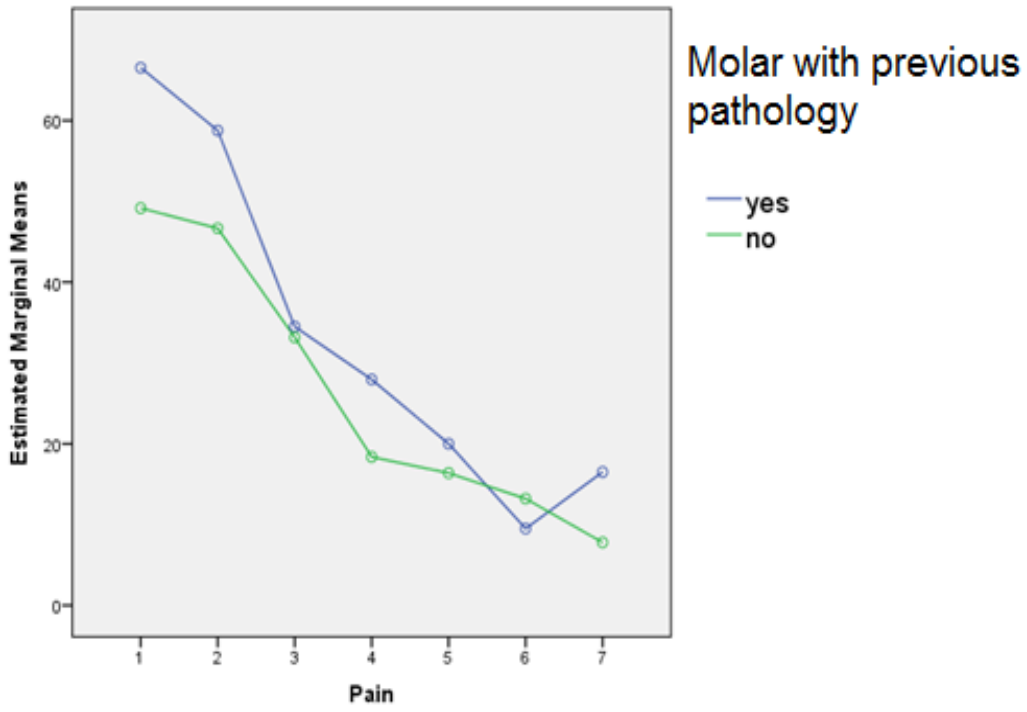
The molar position also plays an important role in pain scores: totally retained, upper third molars had more pain from day 1 to 7 than partially erupted or fully erupted third molars. Graphic 5.

Graphic 5.



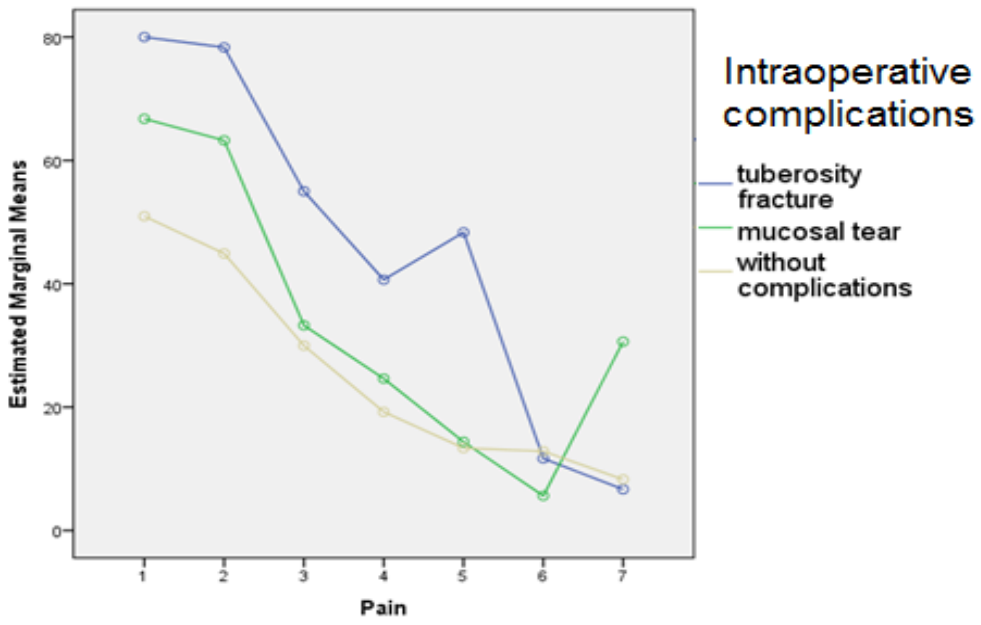
No significant differences in pain between molars with pre-existing disease and without previous symptoms occurred, but molars with pathology showed slightly higher pain scores on day 1 *(Graphic 6*).

Graphic 6



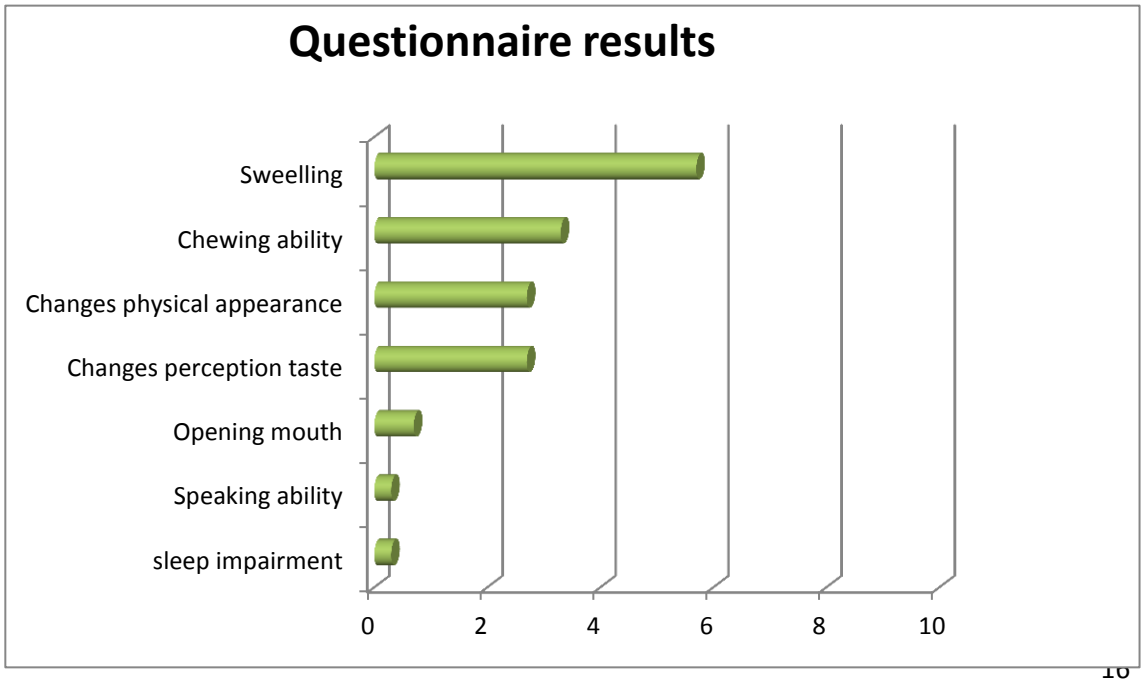
The complication that showed the highest pain score was the tuberosity fracture, as it is shown in *Graphic 8*, while there were not significant differences in pain between the mucosal tear and the uncomplicated surgery.

Graphic 8



In the questionnaires we deal the biggest changes reported were swelling 57%, chewing ability 33%, changes and physical appearance and changes perception taste 27%, however opening mouth, speaking ability and sleep impairment had less than 10%. It is shown in *Graphic 9.* In these cases we included patients who marked higher scores.

Graphic 9



Seventy-three percent of the patients continued to carry out their normal activities, 60% continued playing sports, and only 7 % discontinued their work. This means they suffered little impact on their quality of life.

Only 3 % of patients noticed changes in their voice and their ability to speak.

5. – DISCUSSION

One of the main problems of this study was to recruit patients undergoing only extraction of upper third molars. Usually, in order to increase the patient comfort and reduce the number of visits, patients underwent extraction of both third molars of the same side, which was an exclusion criterion.

A limitation of the present study is that data are subjective, based only on the patient perception. However, this is a constant limitation in studies of QoL. Another limitation of the study is that the questionnaire only collected information corresponding to the first 7 days after surgery; consequently, only the short-term evolution of the changes in QoL could be assessed. Therefore, possible long-term complications could not be evaluated, which might be interesting especially in extractions with intraoperative complications. There are studies reporting late infections after the extraction of third molars, although they are usually related to lower third molars. [14]

Pain seemed to lineally decrease and practically disappeared on day 4. Other studies about lower third molar extraction showed that pain is more persistent, and disappears around day 6 or 7. [12]

Despite the fact that the VAS score for pain across the 7 days showed a progressive reduction in pain intensity, the outliers on day 6 and day 7 might be caused by the anxiety of return to the hospital to remove the suture. This might be an explication of the higher score of pain around day 6 and day 7.[15]

It is interesting to compare our pain scores with Colorado - Bonnin et al, and with Sancho - Puchades considering that extractions were performed at the same institution, with the same surgical technique and the same anesthetic technique. However, in the first study, only lower third were extracted under local anesthesia and in the second one the four wisdom teeth were extracted under conscious sedation. Pain scores observed in our study were slightly lower on days 4, 5, 6 and 7, comparing with Colorado - Bonnin et al and Sancho - Puchades, but during the first three days were similar. [1, 2]

Unlike the study of mandibular third molars where there is a constant higher pain in pathological molars. [1] In our study population, only 50% of upper third molars had previous symptoms, all the same Raymond et al study reported 54% of molars with previous symptoms. [3]

It was not possible to analyze pain scores based on the experience of the professional considering that 93 % of surgeries were conducted by first course students. However this is a variable of great interest where some studies show a smaller number of complications with more experimented professionals. [3, 16]

Therefore the biggest drawbacks were inflammation and discomfort related to the chewing ability, from 10% to 30 %. As a result, the quality of life is basically affected by eating difficulties. These figures are considerably higher when removing the 4 third molars at the same time 57.1%. [2] This shows that isolated extractions have a faster recovery of the ability to eat.

Most of the patients continued to carry out their normal activities. They suffered little impact on their quality of life.

Regarding changes in chewing ability and the problems of opening the mouth in our results 7% and 20% respectively reported this inability, however upon lower third molar removal up to 80% of patients reported changes in chewing ability. [1] When 4 third molars are extracted under conscious sedation 50% of patients reported trismus. Therefore, for upper third molar extraction there is less chance of developing trismus or masticatory problems, probably related to a shorter operating time and a local inflammation that affects less muscles related to masticatory function such as masseters and pterygoids. [17]

About 3 % of patients noticed changes in their voice and their ability to speak. We found great differences when extraction of the 4 wisdom teeth is performed simultaneously with 10 % of change in their voice and a 60% of difficulties to be understood other people. [2] In the extraction of mandibular third molars 20% perceived changes in their voice, while 57 % had problems to be understood.

A greater ability to speak might be related to the lower prevalence of trismus and ability to open the mouth, with better pronunciation.

In any case talking problems are secondary in other studies. [10, 3] For the patient, it might be of great importance if their working life requires public speaking. However, the upper third molar extraction reported very few cases of impossibility of speech.

Between 20% and 27 % of patients showed an alteration in taste perception for the first 7 days. Similar results were found in the study of Colorado Bonnin et al, between 15 and 27.5 % quite a lot and a little respectively. In the case of lower molars this could be related with lingual nerve function or use of chlorhexidine mouthrinses.

In upper molar extractions rinses with chlorhexidine digluconate might play an important role in the perception of flavor, especially increasing the threshold for salty taste. [1, 4, 13]

The McGrath cohort study confirms that there is a deterioration in the quality of life in short term, but better oral health in long term, especially observed in cases of previous pericoronitis.[11] Our study confirms that the quality of life is slightly affected in short term.

If we analyze the level of satisfaction we note that 93 % of patients are satisfied and believe that their problem is solved. Most studies show similar satisfaction rates above 90 %. [5, 2,1,10, 3]

A variable that we did not take into account, but could be interesting, is the tobacco use, which we believe that could affect postoperative pain levels and the degree of inflammation, especially in the extractions that require more aggressive surgical techniques.

6.- CONCLUSIONS

6.1.-Spanish version

La mayoría de pacientes están satisfechos con el tratamiento y creen que su problema ha sido resuelto. Aunque hay un pequeño porcentaje que no lo repetiría, ni lo recomendaría.

Durante el día 1 y el día 2 las puntuaciones de dolor son similares a las de otros estudios sobre extracción de cordales inferiores y sobre extracción de los cuatro cordales, podemos considerar que se trata de un postoperatorio más corto respecto de las otras intervenciones.

No hay diferencias significativas en las puntuaciones del dolor en función del género. Sin embargo sí que hay diferencias de dolor con la variable técnica quirúrgica, posición del molar, molares con patología previa y complicaciones intraoperatorias. Respectivamente se han encontrado mayores puntuaciones de dolor en intervenciones con ostectomía y odontosección, en cordales incluidos, y en intervenciones con complicaciones intraoperatorias.

El mayor inconveniente que encontraron los pacientes fue la inflamación y las dificultades masticatorias.

Consideramos que la intervención ha tenido pocas repercusiones a nivel de su calidad de vida, ya que la mayoría han continuado con sus actividades habituales.

El análisis sobre las repercusiones de las intervenciones quirúrgicas en la calidad de vida de los pacientes es importante para una evaluación preoperatoria óptima y conocimiento de las indicaciones adecuadas después de la cirugía. Además, permite al cirujano dar expectativas realistas a los pacientes sobre los días postoperatorios y dejar que el paciente elija el mejor momento para someterse al procedimiento, tratando de minimizar las interferencias con la vida cotidiana.

6.2.- English version

Most patients are satisfied with the treatment and believe that their problem is resolved. Although, there is a small percentage of patients that would not repeat either recommend it.

During day 1 and day 2 pain scores are similar to other studies of mandibular third molars extraction and 4 wisdom teeth extraction. However, postoperative pain disappears faster compared to these other surgeries.

There are not significant differences in pain scores by gender. However, there are differences of pain with the variable surgical technique, molar with previous pathology eruption position, and intraoperative complications. In addition, pain scores are increased in interventions with osteotomy and tooth section, in included wisdom teeth, wisdom teeth with previous pathology and extractions with intraoperative complications.

The biggest drawback that patients found was inflammation and chewing difficulties.

We believe that the intervention had little impact in their quality of life, considering that most continued their normal activities.

The analysis of the repercussions of the surgical interventions on patients' QoL is important for an optimal preoperative assessment and development of appropriate indications after the surgery. Furthermore, it enables the surgeon to give the patient realistic expectancies of the postoperative days, and helps the patient choose the best moment to undergo the procedure, trying to minimize mayor interferences with everyday life.

7.- BIBLIOGRAPHY

1.- Colorado-Bonnin M, Valmaseda-Castellon E, Berini-Aytes L, Gay-Escoda C. Quality of life following lower third molar removal. Int J oral Maxillofac Surg. 2006; 35:343-47.

2.- Sancho-Puchades M, Valmaseda-Castellon E, Berini-Aytes L, Gay-Escoda C. Quality of life following lower third molar removal under conscisious sedation. Med Oral Patol Oral Cir Bucal. 2002; 17:994-99.

3.-Savin J, Ogden GR. Third molar surgery- a preliminary reporto n aspects affecting quality of life in the early postoperative period. Br J Oral Maxillofac Surg 1997; 35:246-53.

4.- Shafer DM, Frank ME, Gent JF. Fischer ME. Gustatory function after third molar extraction. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1999; 87:419-28.

5.- Lopes V, Mumenya R, Feinmann C, Harris M. Third molar surgery an audit of indications for surgery, post-operative complaints and patient satisfaction. Br J Oral Maxillofac Surg 1995; 33: 33-35.

6. Gay Escoda C, Piñera Penalva M, Valmaseda Castellon E. Cordales incluidos. En: Gay Escoda C, Berini Aytés L. Tratado de Cirugía Bucal. Madrid: Ediciones Ergon; 2004. P 387-459.

7.- Ogden Gr, Bissias E, Ruta DA, ogston S. Quality of life following third molar removal: a patient versus professional perspective. Br Dent J. 2003; 194: 265-68.

8.- Grossi Gb, Marioana C, Garramone RA, Borgonovo A, Creminelli L, Santoro F. Assessing postoperative discomfort after third molar surgery: a prospective study. J Oral Maxillofac Surg. 2007; 65: 901-17

9.-Coulthard P, Pleuvry B, Dobson M, Price M. Behavioural measurement of postoperative pain after oral surgery. Br J Oral Maxillofac Surg 2000; 38:127-131.

10.-White RP, Shugars DA, Shafer DM, Laskin DM, Buckley MJ, Phillips C. Recovery after third molar surgery: clinical and health-related quality of life outcomes. J Oral Maxillofac Surg 2003; 61: 535-44

11.-McGrath C, Comfort MB, Lo EC, Luo Y. Can third molar surgery improve quality of life? A 6-month cohort study. J Oral Maxillofac Surg 2003; 61:759-63.

12.- Deepti C, Rehan HS, Mehra P,Changes in quality of life after surgical removal of impacted mandibular third molar teeth. J Maxillofac Oral Surg. 2009; 8:257-60

13.-Helms JA, Della-Fera MA ,Mott AE, Frank ME. Effects of clorhexidine on human taste perception . Arch Oral Biol. 1995; 40:913-20

14.- Figueiredo R, Valmaseda-Castellón E, Berini-Aytés L, Gay-Escoda C. Delayed-Onset Infections After Lower Third Molar Extraction: A Case-Control Study. 2007; 65:97-102.

15.- Gorczyca R, Filip R, Walczak E. Psychological Aspects of Pain. Ann Agric Environ Med. 2013; 1:23–27.

16.- Blondeau F, Nach GD Extraction of Impacted Mandibular Third Molars: Postoperative Complications and Their Risk Factors. 2007; 73:325-27.

17.- Okeson Jeffrey P. Etiología de los trastornos funcionales del sistema masticatorio. En: Okeson Jeffrey P. Tratamiento de oclusión y afecciones temporomandibulares. Madrid: Edición. Ed. Mosby Co; 2003. P.149-90.

8.- ANNEX

8.1.- Patient information

HOJA DE INFORMACIÓN GENERAL

Título del estudio: “Calidad de vida tras la extracción quirúrgica de terceros molares superiores”

Acaba de incorporarse a un estudio clínico que tiene como objetivo evaluar la calidad de vida, el dolor, inflamación y trismo postoperatorios tras el tratamiento quirúrgico de la extracción de terceros molares superiores. Para participar en este estudio es indispensable que conozca y haya aceptado las condiciones de este estudio y nos otorgue su consentimiento informado por escrito mediante su firma. Recuerde que deberá acudir a los 7 días tras la intervención quirúrgica para que le hagamos las revisiones pertinentes. En esta revisión se evaluará el grado de dolor, inflamación y dificultad para abrir totalmente la boca. Todas las visitas tendrán lugar en el HOSPITAL ODONTOLÒGIC DE LA UNIVERSITAT DE BARCELONA.

Los resultados de las revisiones clínicas efectuadas se procesarán con el único fin de llevar a cabo el estudio clínico “Calidad de vida tras la extracción de terceros molares superiores”. Se preservará en todo momento el anonimato. En caso de emplearse las imágenes clínicas tomadas con fines de divulgación de la investigación, se pedirá su expreso consentimiento o se ocultará debidamente su identidad. Ante cualquier duda o problema que se le presente, no dude en consultar con el Dr. Valmaseda, responsable del estudio.

Muchas gracias por su colaboración.

8.2.- Informed consent

CONSENTIMIENTO INFORMADO ESCRITO

Título del estudio: “Calidad de vida tras la extracción de terceros molares superiores”

Yo,……

Habiendo entendido lo que los investigadores de este estudio me han explicado y habiendo leído la hoja de información al paciente que se me ha entregado, estoy suficientemente informado y comprendo que mi participación es voluntaria y que puedo retirarme cuando quiera del estudio, sin tener que dar ningún tipo de explicaciones y sin que esto repercuta en el trato y cuidados posteriores por parte de los investigadores.

Presto libremente mi consentimiento para participar en este estudio.

D.N.I: Firma del paciente: Firma del investigador:

Investigador de contacto: Vanesa Avellaneda Gimeno.

L’Hospitalet de Llobregat _____ de_____de_____.

8.3.- Questionnaire of QoL

CUESTIONARIO CALIDAD DE VIDA

Aislamiento social	No	Sí
1a. Mantuvo sus actividades sociales habituales?		
1b. Ha continuado practicando su deporte o hobby favorito?		
En caso negativo, indique la razón:		
1c. Dolor y/o inflamación		
1d. Apariencia física		
1e. Mal humor		
1f. Malestar		

Aislamiento laboral				
2a. Ha pedido una baja laboral o ha dejado de trabajar?				
2c. Afectó la cirugía su rendimiento en el trabajo?				
2d. Le acompañó alguien a la cirugía?				
2e. Dejó esa persona de trabajar para acompañarle?				

Habilidad para comer y alteraciones de la dieta.	en absoluto	ligeramente	significativamente	totalmente
3a. ¿Ha continuado con su dieta habitual?				

3b. ¿Ha notado alteraciones en la percepción del sabor?		
3d. ¿Ha notado alteraciones en su capacidad masticatoria?		
3e. ¿Ha tenido problemas para abrir su boca con normalidad?		
Habilidad para hablar.		
4a. ¿Ha notado cambios en su voz?		
4b. ¿Ha tenido dificultades para pronunciar correctamente?		
4c. ¿Al hablar, han tenido otras personas problemas para entenderle?		
Dificultades para dormir.		
5a. ¿Ha tenido problemas para quedarse dormido / dormida?		
5b. ¿Ha tenido interrupciones del sueño?		
5c. ¿Se ha sentido especialmente cansado / cansada?		
Apariencia física.	No	si
6a. ¿Ha notado cambios en su aspecto físico?		
6b. ¿Es lo que esperaba?		

8.4.- Visual Analogue Scale for pain

ESCALA ANALÓGICA VISUAL DE DOLOR

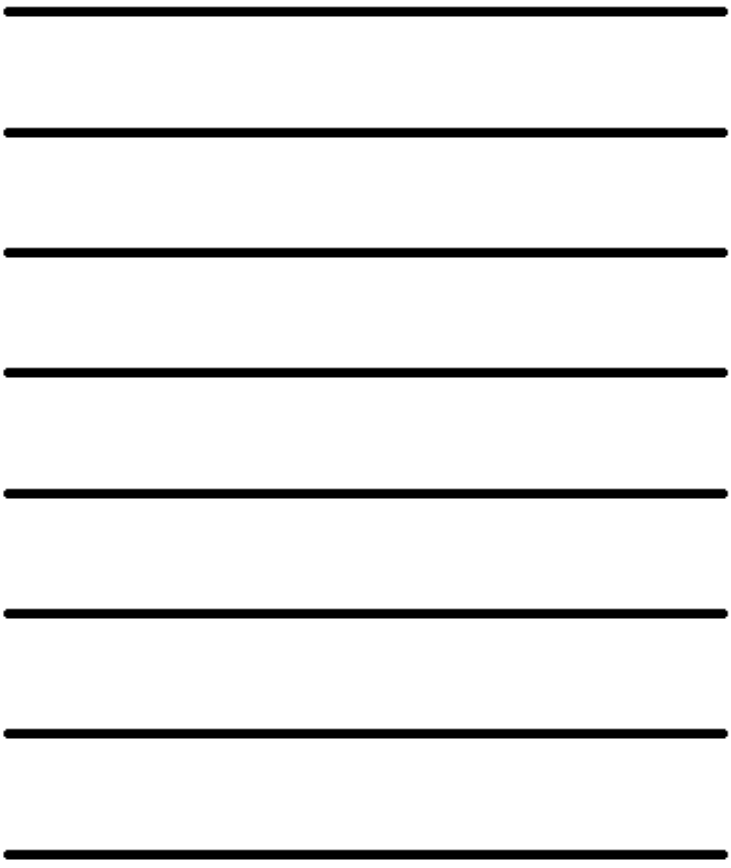
NOMBRE DEL PACIENTE (G): HC:

EDAD: FECHA DE LA CIRUGÍA:

Día	Nº comprimidos analgésico
1	
2	
3	
4	
5	
6	
7	
8	

Escala analógica visual de dolor

Nada de dolor Máximo dolor



- El día 1 es el día de la extracción, y el día 8 es el día de la retirada de la sutura. Debe hacer una única marca vertical para cada día que corte la línea horizontal. La izquierda es “nada de dolor” y la derecha es “máximo dolor imaginable”.
- Debe indicar para cada día el número total de comprimidos de analgésico que ha tomado, e indicar la marca comercial y la dosis de un comprimido.

8.5.-Questionnaire of suture

CUESTIONARIO PARA EL DIA DE LA SUTURA

Dolor e incomodidad al retirar la sutura.	en absoluto	ligeramente	significativamente	totalmente
7a. ¿Retirar la sutura ha sido desagradable?				
7b. ¿Acudir a retirar la sutura le ha creado ansiedad?				
7c. ¿Le ha acompañado alguien a retirar la sutura?				

Satisfacción con el tratamiento.	Si	No
8a. ¿Está satisfecho / satisfecha con el tratamiento?		
8b. ¿Lo recomendaría?		
8c. ¿Lo repetiría?		
8d. ¿Siente que el problema que le hizo buscar ayuda está resuelto?		