Brożyna Klaudia, Tkaczyk Jędrzej, Bąk Tomasz, Wojciechowicz Jolanta, Gawęda Anna, Baran Marcin, Tomaszewski Tomasz. Dislocation of mandible in 48 year old patient - the continuation of a therapy. Journal of Education, Health and Sport. 2018;8(9):570-576 eISNN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.1412047
http://ojs.ukw.edu.pl/index.php/johs/article/view/5907

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 02.08.2018. Revised: 18.08.2018. Accepted: 09.09.2018.

Dislocation of mandible in 48 year old patient - the continuation of a therapy

Klaudia Brożyna[1], Jędrzej Tkaczyk[1], Tomasz Bąk[2], Jolanta Wojciechowicz[2], Anna Gawęda[2], Marcin Baran[2], Tomasz Tomaszewski[2]

[1]Student`s Research Circle, Department of Maxillofacial Surgery, Medical University of Lublin

[2]Department of Maxillofacial Surgery, Medical University of Lublin

Abstract

Dislocation of a temporomandibular joint (TMJ) is a rare disfunction, which has multiform background divided into imbalance in the function of neuromascular component or structural deficit.

A 48-year-old woman was admitted to the Department of Maxillo-Facial Surgery of the Medical University of Lublin due to continuation of a treatment of TMJ dislocation. Previous hospitalization was performed a few months earlier. Reposition in general anaesthesia was used as a treatment, however, it ended up with defeat. Current hospitalization with open surgery reposition was scheduled. Bilateral condylectomy was prosecuted. After the surgery correct movability and proper anterior-posterior placement of mandible were achieved.

Keywords: Dislocation of mandible, reposition of temporomandibular joint,bilateral condylectomy

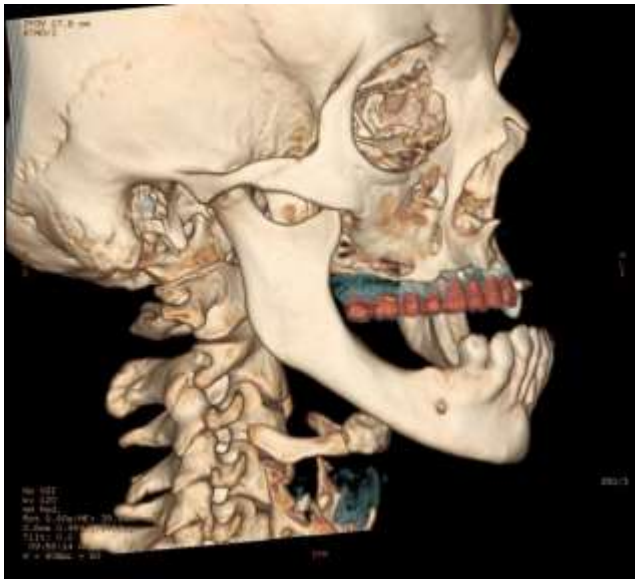
Introduction

Dislocation of a temporomandibular joint (TMJ) is a rare disfunction, which have multiform background divided into imbalance in the function of neuromascular component or structural deficit [1]. Luxation of TMJ comprises 3% of all dislocations of a body [2]. The pathophysiology of the disorder consists in displacement of condylar process outside of TMJ with perpetuation in incorrect position and joint capsule damage [3]. This pathological placement cannot be adjusted by itself and it demands help of professionals [4]. Disorder is most often bilateral, most frequent type is anterior dislocation [5,6]. Situations, in which disorder can occur, consist in wide opening of mouth during yawing, dental procedures or endoscopic examination [7,8]. The TMJ dislocations are classified into acute and chronic [4]. The last type is also divided into chronic recurrent, when it recurs after a short time and chronic persistent if it occurs constantly for a long time [9]. According to surveys and articles, which described dislocation of mandible, the most common are chronic recurrent dislocations [10].

Case report

A 48-year-old woman was admitted to the Department of Maxillofacial Surgery of Medical University of Lublin due to continuation of a treatment of TMJ dislocation. Previous hospitalization was performed a few months earlier. According to anamnesis, the disorder in temporomandibular joints occurred 2 months before admission to the hospital. In physical examination, which was performed after accession, the negative horizontal occlusion, interposition of mandible and opening of mouth for about two finger width were detected Range of mouth opening was about 2 cm. As a result of above symptoms, patient`s speech was incoherent and misunderstood. During first stay in the hospital, the full diagnosis and treatment were prosecuted. Computed tomography (CT) scan detected many abnormalities within TMJ and mandible; anterior dislocation of both TMJ with deformation of heads of mandible, malformation of posterior parts of zygomatic arches on both sides, deformation within adhesion between coronoid process of mandible and anterior part of zygomatic arch on the left side. Reposition in general anaesthesia was used as a treatment, however it ended up with defeat.

Probably because of a long time (2 months) between occurring the disorder and admission to the hospital the final diagnosis was bilateral chronic dislocation of temporomandibular joints.



Graphic 1. Dislocation of temporomandibular joint, deformation of head of mandible and posterior parts of zygomatic arch on the right side.

Graphic 2. Deformation of coronoid process of mandible and anterior part of zygomatic arch on the left side.

Current hospitalization with open surgery and the bilateral condylectomy with coronal sutures was scheduled. The course of surgery contained incisions, which were localised in temple area on left and right side, merged together in border between forehead and hair scalp skin. Temporal fascia was dissected on both sides. The next step was to dissect soft tissues from zygomatic arch and upper side of zygomatic bone shaft. The adhesions within joint capsules and between heads of mandible and base of the skull were released. Owing to this procedure wide range rotation movements of mandible were achieved, however there was no possibility

to implement head of the mandible into mandibular fossa on both sides, because of mandibular heads malformation. On the right side, due to degeneration the articular disc was not identified. On the left side articular disk was on articular tubercle, with no possibility to reposition. Bilateral condylectomy was prosecuted. Next steps was to round stump of mandibular neck on both sides and implement them into mandibular fossa. After surgery correct movability and proper anterior-posterior placement of mandible were achieved.

Incisions were sewed with a stapler among scalp skin. The patient was checked out from hospital with recommendation of economize lifestyle, avoidance of physical activity for at least 6 weeks, mechanotherapy; active physiotherapy with of dilation and lateral movements of mandible with 15 repetitions each exercise 2 times per day. Every slow single motion should last for 5 seconds, then the reached position should be held for 3 seconds. The end of each single repeat is to relax muscles. After the surgery the patient was instructed to attend to control appointments every week in outpatient clinic.

Discussion

Dislocation of mandible can be treated by both non-surgical and surgical methods [10]. Non-surgical treatment can be used with or without local or general anaesthesia and with or without fixation [11]. This therapy is less effective than surgical methods, nonetheless this kind of treatment should be done first, before implementation of open surgery methods [10]. In this case report, therapy was performed in proper order; during first hospitalization closed reposition in general anaesthesia was chosen as a first and less invasive treatment. After failure of that method, open surgery treatment was planned. Chosen way of treatment should be always connected with the lowest risk for the patient and low chance for recurrence [10]. Moreover surgeon should start with less invasive methods and then step-by-step continue the therapy with more invasive surgical techniques [12]. In this case, open surgery reposition of dislocation of TMJ, which is known as a one of next methods in the ladder of treatment, was unsuccessful and all in all bilateral condylectomy was performed.

It is known that, in this kind of patients, who had an unsuccessful attempt of closed reduction of dislocation, open surgery is a method of choice; indirect and direct [10]. First one contains mandibular angle wires, elastic traction with intermaxillary fixation and reduction via sigmoid notch. If mentioned ways of treatment fail, direct open surgery reduction is a next step, which is especially referred at cases with anatomic modification of condyles, eminence of joints or musculo-capsular tissue [13]. Surgeons distinguish eminectomy, myotomy high condylectomy, meniscectomy, condylotomy 10]. First mention about eminectomy was described by Myrhaung

in 1951 [14]. Expurgation of eminence makes the return of condyle possible with no intrusion [10]. In 1949 Bowman textualized myotomy as a further method of a treatment of TMJ dislocation with anatomic malformations. Unfortunately this method enables only rotational movements of the condyle [10]. The chance of recurrence because of fibrosis after surgery is higher after myotomy than after condylotomy [15]. Meniscectomies are procedures, which are performed, when morphology and location of altered disc cause dislocation or prevent self reduction [16]. According to Gotlieb`s surveys condylectomy, which is used in prolonged types of dislocations, is dedicated to cases, where there is ankylosis but there is possibility of entering the base of the skull and excessive bleeding from locations like pterygoid plexus, middle meningeal vessels or internal maxillary [17]. Orthognathic surgery or condylectomy have also been described as a way to achieve a functional occlusion where reduction was unavailable [18]. Satisfying occlusal relationship is achieved by condylectomy, but this method sometimes needs to be sustained by coronoidectomy and suprahyoid myotomy [19]. The most common complication of bilateral condylectomy is anterior open bite deformity [18]. According to literature for 24 cases of long-standing mandible dislocation, 20 of them needed to be treated by open surgery methods [17]. In another survey, long-standing TMJ disorder for 29 of cases, 13 were treated with various surgical procedures like condylectomy, inverted l osteotomy, oblique ramus osteotomy, or vertical ramus osteotomy. Six of cases were improved by maxillomandibular fixation and anterior elastic traction [12]. In cases of TMJ dislocation, in which the joint has been out of the fossa for more than 6 months, it is essential to contemplate orthognathics or total joint prosthesis [13].

There is no doubt, that physiotherapy is essential to complement surgery treatment and achieve complete and successful cure of a patient. The aim of that therapy is to decrease or eliminate the pain, reduce tonicity and improve of motor coordination [20]. One of the kind of that therapy are muscle exercises, which are divided into groups: active movements performed by patient, active exercises with isometric contraction of muscles with overpassing the resistance, active exercises supported by therapists and passive movements leaded by physiatrists [21]. It is worth to say, that exercises should be performed systematically, according to planned cycle, with proper technique to avoid crackle in TMJ and pain [22, 23]. Another types of post-operative therapy in TMJ disorders consist on cryotherapy, ultrasounds, iontophoresis, laser therapy and phototherapy [24].

References:

1. Sharma NK, Singh AK, Pandey A, Verma V, Singh S. Temporomandibular joint dislocation. Natl J Maxillofac Surg 2015;6:16-20.
2. Shorey CW, Campbell JH. Dislocation of the temporomandibular joint. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2000;89:662-8.
3. Górecka M., Pihut M., Ferendiuk E. Charakterystyka schorzeń stawów skroniowo-żuchwowych. Dental Forum. 2016;XLIV(1):63–67
4. Caminiti MF, Weinberg S. Chronic mandibular dislocation: The role of non-surgical and surgical treatment. J Can Dent Assoc 1998;64:484-91.
5. Bartkowski SB. Chirurgia szczękowo-twarzowa. Choroby stawu skroniowo-żuchwowego. Collegium Medicum UJ. 2008; 361–378
6. Hoard MA, Tadje JP, Gampper TJ, Edlich RF. Traumatic chronic TMJ dislocation: Report of an unusual case and discussion of management. J Craniomaxillofac Trauma. 1998;4:44–7
7. Lipp M1, von Domarus H, Daubländer M, Leyser KH, Dick W. Effects of intubation anesthesia on the temporomandibular joint. Anaesthesist. 1987 Aug;36(8):442-5.
8. Vasconcelos BC, Porto GG, Neto JP, Vasconcelos CF. Treatment of chronic mandibular dislocations by eminectomy: Follow-up of 10 cases and literature review. Med Oral Patol Oral Cir Bucal. 2009;14:e593–6
9. Akinbami BO. Evaluation of the mechanism and principles of management of temporomandibular joint dislocation. Systematic review of literature and a proposed new classification of temporomandibular joint dislocation. Head Face Med. 2011;7:1-9
10. Marqués-Mateo M, Puche-Torres M, Iglesias-Gimilio ME. Temporomandibular chronic dislocation: The long-standing condition. Med Oral Patol Oral Cir Bucal. 2016 Nov 1;21 (6):e776-83.
11. Agbara R, Fomete B, Obiadazie AC, Idehen K, Okeke U. Temporomandibular joint dislocation: experiences from Zaria, Nigeria. *Journal of the Korean Association of Oral and Maxillofacial Surgeons*. 2014;40(3):111-116. doi:10.5125/jkaoms.2014.40.3.111.
12. Rattan V, Rai S, Sethi A. Midline Mandibulotomy for Reduction of Long-Standing Temporomandibular Joint Dislocation. Craniomaxillofacial Trauma Reconstr. 2013;6:127-32.
13. Liddell A, Perez DE. Temporomandibular joint dislocation. Oral Maxillofac Surg Clin North Am. 2015;27:125-36.

14. Myrhaug H. A new method of operation for habitual dislocation of the mandible; review of former methods of treatment. Acta Odontol Scand. 1951;9:247-60.
15. Shakya S, Ongole R, Sumanth KN, Denny CE: Chronic bilateral dislocation of temporomandibular joint. Kathmandu University Medical Journal 2010, 8:251-256.
16. Cardoso AB, Vasconcelos BC, Oliveira DM: Comparative study of eminectomy and use of bone miniplate in the articular eminence for the treatment of recurrent temporomandibular joint dislocation. Braz J Otorhinolaryngol 2005, 71(1):32-7.
17. Adekeye EO: Inverted L shaped osteotomy for prolonged bilateral dislocation of the temporomandibular joint. J oral Surg 1976, 41:563-576.
18. Ugboko VI, Oginni FO, Ajike SO, Olasoji HO, Adebayo ET. A survey of temporomandibular joint dislocation: aetiology, demographics, risk factors and management in 96 Nigerian cases. Int J Oral Maxillofac Surg 2005;34:499–502
19. Ardehali MM, Kouhi A, Meighani A, Rad FM, Emami H. Temporomandibular joint dislocation reduction technique: a new external method vs the traditional. Ann Plast Surg. 2009;63:176–8
20. Baron S., Karasiński A.: Leczenie schorzeń stawów skroniowo-żuchwowych w przypadkach dyslokacji krążka i zmian zwyrodnieniowo-wytwórczych. Protet. Stomatol., 2001, 11, 10-14.
21. Straburzyński G., Straburzyńska-Luba A.: Medycyna Fizykalna, PZWL, 1997, Warszawa.
22. Kleinrok M. Ćwiczenia czynne wolne w leczeniu dysfunkcji stawów skroniowo-żuchwowych. Proet. Stomatol., 1972, XXII,5, 339.
23. Kleinrok M.: Rozpoznawanie i leczenie zaburzeń czynnościowych układu ruchowego narządu żucia, Sanmedica, Lublin 1999.
24. Wałach A, Pihut M, Loster J. Physiotherapeutic interventions in the treatment of patientswith temporo-mandibular disfunction. Protet. Stomatol., 2006, LVI, 4, 274-281