

Kargol Jaromir, Bąk Tomasz, Wojciechowicz Jolanta, Gawęda Anna, Tomaszewski Tomasz. When words hurt ... literally. A case report of temporomandibular joint dislocation in a patient with Tourette's syndrome. *Journal of Education, Health and Sport*. 2018;8(9):459-464. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.1403947>
<http://ojs.ukw.edu.pl/index.php/johs/article/view/5868>

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

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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: 24.08.2018.

When words hurt ... literally. A case report of temporomandibular joint dislocation in a patient with Tourette's syndrome

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Keywords: Tourette's syndrome, temporomandibular joint dislocation, temporomandibular joint injury

Abstract:

Tourette's syndrome is a disease from the borderlands of psychiatry and neurology. Its course consists of chronic motor tics, vocal tics or vocalizations. The first symptoms appear in childhood or adolescence. Tics may cause body injuries. In this case, tics probably have contributed dislocation of the temporomandibular joints.

Introduction:

Tourette's syndrome is a neuropsychiatric spectrum disorder characterized by the presence of simple or complex motor, vocal tics and vocalizations [1]. It is commonly associated with obsessive compulsive disorder (OCD) and attention-deficit hyperactivity disorder (ADHD) [2]. The disease usually begins in childhood or adolescence and often lasts throughout life, affecting personal and social functioning.

George Albert Gilles de la Tourette, a student of Jean-Martin Charcot, widely considered the founder of modern clinical neurology, gave a detailed, clear description of nine patients suffering from "malady of tics" [3].

Tourette described the clinical features of the syndrome as motor and vocal tics, echolalia (repeating words of the person from the environment), echopraxia (imitating the movements of another person), coprolalia (pronouncing or shouting of offensive words, obscenities or profanities) as well as hereditary nature of the disease.

The clinical course of Tourette's syndrome presents wide variety. The average age at which tics appear is 5.6 years [4]

The majority of patients with TS achieve a complete or almost complete remission of tics at the age of 21, but in 10-20% of cases, the symptoms range, can persist or worsen [5].

The frequency, severity and course of the tics may vary in individual patients, as well as and it shows a large diversity in the patient populations [6,7]. Tics are divided into simple and complex [12]. Simple motor tics involve individual muscles or groups of muscles, while complex ones consist of more coordinated, complicated and sequenced movements, which in some cases may be socially inappropriate and unacceptable [8].

The common feature of tics is their intensification during waiting, stress, excitement, boredom, irritability or fatigue and a reduction during sleeping, after alcohol consumption or while patient perform physical or mental tasks that require attention [1,8].

The majority of patients present benign, subclinical symptoms that are unlikely to affect their daily functioning [1]. Research conducted in special conditions showed a higher incidence of

Tourette's syndrome in the population of children with school difficulties and with autism spectrum disorders [9,10].

Most researchers agree that boys suffer 3 to 4 times more frequently than girls and this is confirmed in all social classes [11].

The temporomandibular joint is a specialized joint between the mandible and the temporal bone of the skull. It is formed bilaterally the joint surfaces of the mandible head and the front parts of the mandibular fossa that together with the articular tubercle creates concavity. There is articular disc between articular surfaces of the joint. The pathophysiology of the most common, anterior dislocation of mandible involves the anterior movement of the heads anteriorly to the joint nodules (articular eminence) and the impossibility of returning to their normal position [14].

Some patients' conditions increases the risk of temporomandibular joint dislocation [15]:

- Congenital or acquired deficiency of ligamentous system and joint capsule (eg patients with Marfan syndrome [16] or Ehlers-Danlos syndrome [17])
- Irregularities of the anatomical structure of bone elements of the joint [18],
- disorders of the functional or muscular function of the joint,
- neurological disorders

Medical procedures requiring prolonged, wide mouth opening such as intubation, upper gastrointestinal endoscopy, bronchoscopy or dental procedures like molar extraction or root canal treatments may also lead to dislocations [19]. Dislocations can also be caused by excessively, forceful wide mouth opening while yawning, laughing or vomiting.

The most common clinical symptoms are the inability to close the oral cavity, difficulty in speech, drooling of saliva and lip incompetency. In acute dislocation, preauricular pain is present. Chronic, recurrent dislocation is rarely associated with pain. Dislocation may lead to deviation of the chin to the contralateral side. Palpation over the preauricular region may suggest emptiness in the joint space [20].

In the described case, tics in clinical course of Tourette's syndrome probably contributed to the dislocation of the mandible in a young, 15-year-old boy with no clear structural changes in the temporomandibular joints.

Strong muscle contraction as a result of nervous tics significantly impedes the repositioning of dislocations. Patients often requires the use of systemic anesthesia to relax muscles.

Case report:

The 15-year-old boy was admitted to an emergency to the Department of Maxillofacial Surgery of the Independent Public Clinical Hospital No.1 in Lublin. A diagnosis was made: a bilateral, anterior dislocation of mandible. An attempt to reposition the mandible under local anesthesia failed. General anesthesia was used and the mandible reposition was performed. Immobilization with elastic bandage has been used. In computed tomography examination with closer mouth, both sides were placed in the mandibular fossa. Heads of mandible are slightly asymmetrical, on the right side slightly wider and flatter, slightly smaller and more round on the left side, both without destructive features. The mandible head on the right side is tightly attached to the acetabulum. Right articular fissure is narrower than the left. The patient was admitted to the ward with a dislocated mandible. The reposition was maintained and the patient was discharged the next day in a good general condition.

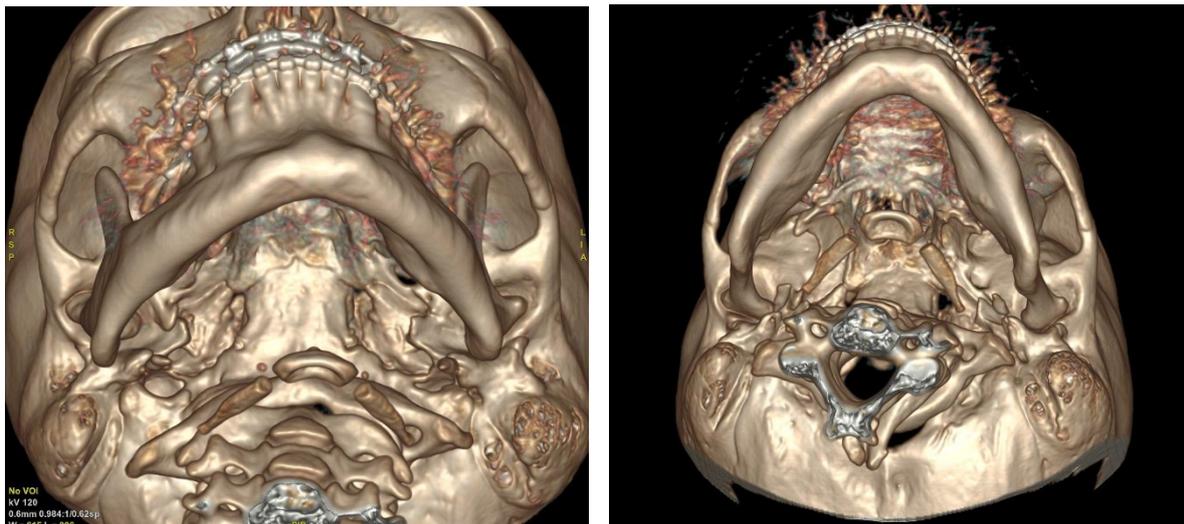


Fig. 1, 2 Asymmetrical temporomandibular joints

The patient has suffered and has been treated because of Tourette's syndrome for 8 years. Clinical examination revealed a bilateral mandible dislocation. According to the interview, it was the fourth sprain of the jaw in the last few days. Previous dislocations have undergone spontaneously reposition.



Fig. 3 Asymmetrical heads of mandible

Discussion:

Tourette syndrome is a challenge for both clinicians and researchers. It is a complex disease entity that can take various forms [12]. The severity and incidence of clinical symptoms in individual patients are highly variable [6]. Accompanying diseases such as the mentioned ADHD or OCD are common [13]. The pathogenesis of the syndrome has not been fully elucidated. The cause of the occurrence is the effect of complex environmental factors on the genetically predisposed person [2]. Since the first descriptions of the disease, many publications have been created to approximate the genetic background of the disease, methods of diagnosis, imaging, physiology and methods of treatment of this syndrome [21]. However, there are still many unexplained issues and challenges for contemporary researchers. Coexisting disorders can significantly affect the quality of life of patients. Although TS does not lead to progressive damage to the nervous system, it can significantly impede the patient's life, paralyze his relationships and social functions. Motor tics can be painful, dangerous and even life-threatening. It was established that 5% of patients go to hospital every year because of tic-related injuries, behaviors leading to self-injury, uncontrolled violence and suicidal thoughts with or without suicide attempts [22]. Such serious cases are associated with a higher severity of motor symptoms and the presence of two or more concomitant psychiatric diseases [2].

Conclusions:

Tourette's syndrome still leaves many unexplained issues and challenges for contemporary researchers. Tics can significantly affect the daily functioning of patients in society and reduce their quality of life. In some cases, they lead to serious and painful body injuries.

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