

Hamular Bursitis and its possible craniofacial referred symptomatology: Two case reports

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ABSTRACT

The diagnosis of craniofacial pain is conditioned by the interdisciplinary management of its presentation especially in the absence of unique and objective signs. Bursitis is a pathological entity recently found in the hamular area and should be included in the diagnosis for exclusion of temporomandibular disorders (TMD), ear-nose-throat pathologies, due to the similar symptomatology to other head and neck conditions. The hamular process bursitis is a painful condition that can easily be confused with glosopharinge or trigeminal neuralgia that generates an uncomfortable feeling in the oropharinge with ipsilateral referred – heterotopic - symptomatology to the head. This pathology, in chronic states, can be responsible for the amplification of the pain perceived by the central excitation effect. In this report are presented two clinical cases of hamular bursitis and its conservative therapeutic management. The recognition of the inflammation of the bursa of the tensor veli palati muscle supplies the specialist with another tool in the management of craniofacial pain.

Key words: Bursitis, pterygoid hamulus, referred pain, temporomandibular disorders.

RESUMEN

El diagnóstico del dolor craneofacial esta condicionado al manejo interdisciplinario por lo confuso de su presentación especialmente en la ausencia de signos únicos y objetivos. La bursitis es una entidad patológica recientemente notificada en la zona hamular y que debe ser vinculada al diagnóstico por exclusión en desordenes temporomandibulares (DTM) y patologías de oído, nariz y garganta, debido a la sintomatología similar a la de otras condiciones que afectan la región de cabeza y cuello. La bursitis del proceso hamular es un patología dolorosa que puede fácilmente ser confundida con neuralgia del glosofaríngeo o del trigémino que genera gran incomodidad en la orofaringe con sintomatología heterotopica referida y patrón ipsilateral a cara. Esta patología en estados crónicos puede ser responsable de la amplificación del dolor percibido por efecto de excitación central. En este reporte se presentan dos casos clínicos de Bursitis Hamular y su manejo terapéutico conservador. El reconocimiento de la inflamación de la bursa del tendón del músculo tensor del velo palatino suministra al especialista una herramienta más en el manejo del dolor craneofacial.

Palabras clave: Bursitis, hamulus pterigoideo, dolor referido, desordenes temporomandibulars.

INTRODUCTION

Throat pain is one of the most difficult to diagnose because of its varied origins that could be vascular, muscular, ligamental or osseous. In the last 34 years different investigators (1,2) have come to observe irritation in the palatine area that corresponds to the hamular process with a referred symptomatic expression to the head and neck zones. Salins (3) in 1989 explained the inflammation of the bursa that covers the tendon of the tensor veli palati – external perystaphylinus muscle – as hamular bursitis.

Hamular bursitis (4) is a pathological entity that when it is present is primarily responsible for referred craniofacial pain, many times disguised as TMD disorders, impacted teeth, trigeminal and glossopharyngeal neuralgia, stylo-hyoid ligament calcification, stylo-mandibular ligament inflammation, tumors, cysts, herpes simplex, infection and otitis media.

Salins (3) named the inflammation of this bursa as “bursitis hamular”. This pathology has a multiple etiology and is formed over the hamular process of the medial pterygoid plate in the sphenoid bone.

It must be understood that the close anatomical and physiological relation between the Eustachian tube, the tensor veli palati muscle, and the pterygoid hamulus correlates the local and referred symptomatology of this pathology.

The sphenoid bone is a middle osseous structure located anterior to the basilar portion of the occipital bone and bilateral shielded by the temporal bone. It has a central body with a pair of great and small wings going laterally with two pterygoid plates – inner and outer - descending from the union of the body and the bigger wings. The pterygoid plates go caudally in a vertical and lateral way, going more inferior the medial plate that terminates in the hamular process (Figure1).

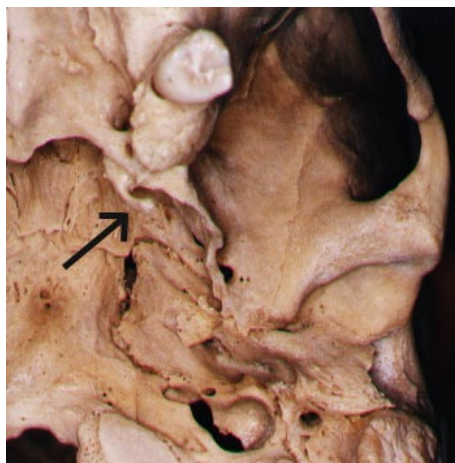


Fig. 1. Pterygoid Hamulus (Arrow).

The tensor veli palati and medial pterygoid muscles are contained in the medial surface of the medial pterygoid plate (5). The lateral zone of tensor veli palate originates in the sphenoid spine, the scaphoid fossa, the tensor tympani muscle and the lateral osseous edge of the sphenoid sulcus. The

medial zone of the tensor veli palati muscle – tubae dilator – described by Gray in 1918 (6) is originated in the middle and posterior third of the Eustachian tube’s membranous wall. These muscles descend toward the lateral surface of the superior pharyngeal constrictor and are internal to the medial pterygoid muscle and converge in a strong tendon to the pterygoid hamulus bending around it in a lateral way and finally goes medially and horizontally to the soft palate to form its aponeurosis in a fan shaped expansion. This aponeurosis fusion the posterior border of hard palate and the aponeurosis of the contralateral homonymous muscle. Due to the lateral insertion of the tube dilator muscle on the Eustachian tube, it pulls directly to its membranous wall and indirectly rotates the tubaric cartilage, opening the Eustachian tube lumen (7,8) allowing middle ear ventilation and atmospheric pressure equalization (9). These muscles are motor innervated by the mandibular branch of the trigeminal nerve and sensorial innervated by the maxillar branch of the same cranial pair.

The hamulus pterygoid or hamular process corresponds to the terminal part of the medial pterygoid plate. It has a hook form located bilaterally in the sphenoid bone medial and posterior to the maxillar tuberosity. This structure projects inferior, posterior and laterally. Morphologically its form, length and width are varied with a bulbous or thin termination. The contraction of tensor veli palati muscle tension the soft palate and opens the Eustachian tube during speaking, swallowing, chewing, breathing, yawning and sneezing. The superior pharyngeal constrictor muscle and the buccinator muscle are confronted in the pterygo-mandibular raphe that originates in the hamulus process and originate in the mandibular posterior mylohyoid line. In the same way a portion of the palate-pharyngeal muscle originates in the hamular process.

Shankland (10,11) in 1996 proved the histological presence of the hamular process bursa (Figure 2). The principal function of this bursa is to diminish the friction over the hamular process by the tendon of tensor veli palati muscle during its function. (12)

The damage of this structure produces inflammation and pain - local or referred – during the soft palate function. Its etiology is not known but the trauma history is very common in the bursitis hamular patients. Anesthesia intubations, swallowing a big bolus, overextended maxillar prothesis, the traumatic strike during teeth brushing, bulimic patients and “fellatio” in child sexual abuse, can generate this pathological state. The pain can be retarded and worsened by patient digital or tongue palpation. Some times the patient has a clinical presentation similar to glossopharyngeal neuralgia reporting incapacity to swallow solid food that forces them to ingest liquids. If the hamular process is prominent these patients will be easily prone to trauma.

Bursitis pain is varied: earache, otic fullness, dysphagia, odynophagia, gustative hyperesthesia, hamular and soft palate pain, sore throat, jaw pain, toothache, burning and pricking dysaesthesias, retro-orbital pain, headaches and hypoesthesia.

Hamular process palpation is made by oral access, manually

(13) or with a blunt instrument in a careful manner reaching the posterior and medial zone of the maxillar tuberosity. The reported pain is frequently localized to the ear zone, but it must be asked if a local or referred pattern is present during the examination. If the palpation procedure response is intense, it must be considered a hamular bursitis cause. Lidocaine infiltration in the hamular process zone helps in the diagnosis. Some times the eythematic presentation in the zone and the elongation of the process is evident.

The response by the pharmacological management (anticonvulsants, muscular relaxants, NSAIDs) is poor (4,11). The therapeutic phase can be surgical or conservative (infiltrations). The local trauma origin must be eliminated and a soft diet suggested. The infiltration of 1 ml of synthetic cortisone with previous anesthesia is suggested (Figure 3). Post-infiltration NSAIDs is recommended. After two weeks it is suggested a second infiltration control be given if the pain has not been eliminated; this situation is not frequent.

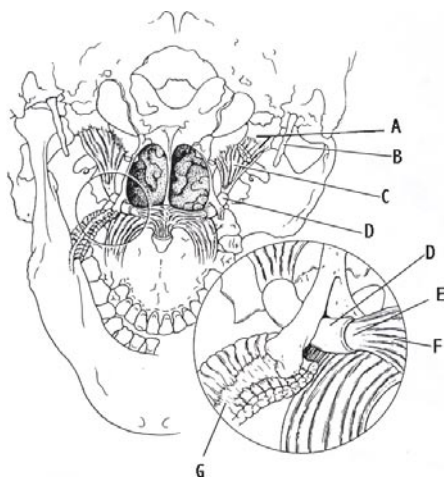


Fig. 2. Hamular bursa (cranial inferior view). A- Tensor veli palati insertion B- Styloid process C- Eustachian tube insertion of medial zone of tensor veli palati muscle D- Bursa E- Tensor veli palati tendon F- Palatine aponeurosis G- Pterigo-mandibular raphe. Modified from: (10)

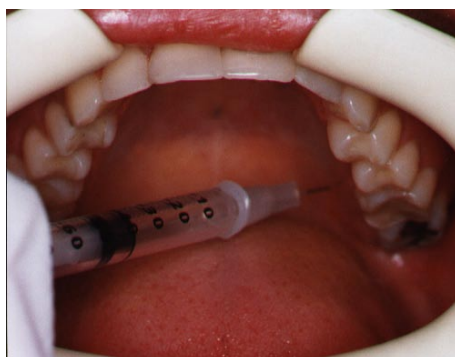


Fig. 3. Bursa and hamular process zone Infiltration.

CLINIC CASES

Case 1

A 43 year old woman consulted her doctor because of left facial pain expressed in several zones: auricular, pre-auricular, temporal, masseterine, mandibular body and angle. Local muscle soreness was found in lateral pterygoids, left medial pterygoid, left superficial masseter, deep masseters besides the right joint reduced luxation in a chronic state and trigger points in trapezius muscles. The otic referred symptoms are: otalgia, tinnitus, vertigo y left fullness without localized ear nose or throat pathology. In a previous medical consult the patient was prescribed anticonvulsive drugs without resolution of a possible trigeminal neuralgia besides the inefficiency of NSAIDs drugs. In the left hamular process palpation the patient report intense local pain and diffuse pain to the left facial area. It was anesthetized in the palatine zone correspondent with the hamular zone and the pain was eliminated. An infiltration with synthetic cortisone was programmed after the lidocaine block. After the alleviation of this hamular pain a muscular tension suppression system was inserted for the muscular involvement of the TMD that appears to produce an otic referred symptomatology (14). The patient's pain has been controlled for 2 years without the recurrence of her original complaints. The referred otalgia was not solved with infiltration maybe due to the acute pain that was produced on the maxillar branch of the trigeminal nerve; however, a possible explanation may start on the bursa pain co-contraction muscular activity that can involve the tensor tympani and tensor veli palati muscles and can produce tympanic tension in a muscle-skeletal complex scenario. Would it be that a bio-psychosocial context additional to the palatine pain can trigger this muscular hyperactivity with its referred expression?

Case 2

A 52 year old woman with otic and craniofacial referred symptomatology (left otalgia, bilateral tinnitus, vertigo, bilateral fullness, left scalp pain and bilateral neck pain) came to consult. From the otolaryngology exam there wasn't any ear, nose or throat pathology found. A muscle-skeletal compromise is found with local muscle soreness in: lateral pterygoids, temporalis, posterior digastrics, bilateral sternocleidomastoids, splenius, and left occipitofrontalis. Additionally, trigger points in bilateral trapezius were found. During swallowing and chewing the patient expressed pain. Moreover, tooth phantom pain was found in mandibular left molars (without pathology), palate burning sensation and scalp secondary hyperalgesia forcing us to recognize a possible neuropathic presentation of the symptoms. The patient expressed a metallic taste sensation periodically. To the left hamular process palpation the pain was triggered locally and referred to the left mandibular and otic zones. Synthetic cortisone was injected in the left hamulus with a previous local anesthesia. After the pain was eliminated and 1 month after infiltrations a muscular tension suppression system device was designed for the TMD treatment. The controls have been in place for 18 months without recur-

rence of the original symptomatology. The muscle-skeletal compromise may have the same concomitant association between bio-psychosocial dimension and muscle activity of the anterior case.

DISCUSSION

Throat pain can be originated in several associated structures that demand a deep examination. The diagnosis is a critical process in which the error or omission produce a diagnosis treatment failure. An exclusion diagnosis is important emphasizing in the clinical history that includes a physical examination. The physical and visual examination of head and neck associated structures is vital: temporomandibular joint, cranial and cervical musculature, stylo-hyoid and stylo-mandibular complex, temporal tendon, sphenopalatine ganglion and parotid gland among others. The above pathologies have a similar symptomatic expression like the hamular bursitis.

The radiological support as images can be useful for the findings of osteophytes or hamulus that generate inflammation. This structure can be seen also in tomography slices if necessary.

The surgical approach is rare due to the successful results of a conservative management. If osteophytes, prominent hamular process or bursa fibrosis are present the surgical approach will be indicated, avoiding carefully the interruption of the tensor veli palati function over this osseous hook as in total hamulotomy that results in tubaric dysfunction with otic expression as hypoacusis besides of a palate-pharynx seal incomplete during speaking and swallowing (15).

As it can be observed in the expressed symptomatology of both patients the bursitis hamular and it's referred otic symptoms component were present. The pathophysiology explanation for it can be focused in the common neural motor connections between the stomatognathic and otic system that can produce extra-activity in the middle ear with its consequences: vertigo, tinnitus, otalgia, hypoacusis and fullness. Although a major muscular activity can be expected during pain states as a protective mechanism in the clinical cases presented the concomitance between pain and the TMD is not the expected cause-effect relationship. It is possible that the TMD found in both patients would be originated before the bursitis hamular pain as a result of another scenario like the bio-psychosocial due to the cognitive-emotional changed dimension found in both patients. The use of muscular tension suppression devices as an adjunct treatment beside the infiltration procedure have proved to provide good results. Any velo-pharynx movement in the hamular zone will produce pain because it is an area especially exposed to any swallowing movement. The above mentioned makes the tensor veli palati muscle non functional due to its contraction to open the Eustachian tube, will produce more pain and patient avoidance of this scenario will void the pressure equilibration of the middle ear and generate otic symptoms if not corrected.

The hamular zone deserves special clinical attention espe-

cially in the differential diagnosis of the wide variety of cranio-cervical pains. The pain in this zone is so intense that it can be confused as neuropathic pain. The opportune treatment in this zone avoids the central excitatory effect and neuro-plasticity that will make more complex the localization of the pathology origin due to the major sensitization and territory expressed during pain episodes.

In the two clinical cases exposed were combined pathologies involving bursitis and TMD. Interdisciplinary management is imperative for the resolution of these painful syndromes under a bio-psychosocial model that explains the stress-muscle pathophysiology connection and the somber origin of the hamular bursitis for a proper solution.

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