

HAMULAR BURSTITIS: DIFFICULT TO DIAGNOSE IN OROFACIAL PAIN

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ABSTRACT

Hamular bursitis is a rare condition, which generates pain in soft palate and oropharynx on swallowing. It produces similar symptomatic expression as temporomandibular disorders, impacted teeth, trigeminal and glossopharyngeal neuralgia, stylohyoid ligament calcification, stylomandibular ligament inflammation, tumors, cysts and otitis media. Thereby, it is a diagnosis of exclusion. Infiltration of local anaesthesia can be an excellent diagnostic aid when differentiating hamular pain from other possible causes. Treatment may be conservative or surgical, depending on the actual cause of the pain. Surgical procedure is rarely indicated.

The hamular zone deserves special clinical attention especially in the differential diagnosis of the wide variety of craniocervical pains. The pain in this zone is so intense that it can be confused as neuropathic pain. This condition is difficult to diagnose due to its complex anatomy and overlap of symptoms similar to other chronic orofacial pain disorders which result in difficulty in treatment. Clinician should thereby understand the anatomy, etiology, clinical features, differential diagnosis for the management of Hamular Bursitis.

Key Words: Bursitis, Hamulus, Pterygoid.

INTRODUCTION

"Bursa" is derived from the Latin word bursa, meaning a purse, named due to its resemblance. Bursae are fluid-filled flattened sacs that acts as a cushion between bones, tendons, joints and muscles.¹ Mannik and Gilliland defined bursitis as an inflammation of unknown cause of any of the many bursae between

tendons, muscles, and bony prominences.² In UK about one in every 200 patient has bursitis. Salins et al explained the inflammation of the bursa that covers the tendon of the tensor veli palatini - external pterygoid muscle as "bursitis hamular".³ Shankland in 1996 proved the histological presence of the hamular process bursa.⁴ The prime role of this bursa is to diminish the friction over the hamular process by the tendon of tensor veli palatini muscle during its function as bursa walls are separated by a capillary film of synovial fluid, which acts as a lubricant.^{3,5} Damage of this structure produces inflammation and can cause local or referred pain during the soft palate function.^{6,7} Hamular bursitis (HB) can cause referred craniofacial pain, which may be disguised as temporomandibular disorders, impacted teeth, trigeminal and glossopharyngeal neuralgia, stylohyoid ligament calcification, stylomandibular ligament inflammation, tumors and otitis media.⁷ HB is a rare disease, and only few cases have been reported till date.

ANATOMY

The sphenoid bone is a midline osseous structure lying anterior to the basilar portion of the occipital bone and is protected on either side by the temporal bones. The sphenoid has a central body with paired greater

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and lesser wings that spread laterally from it, and two pterygoid processes that descend from the junctions of the body and the greater wings. The pterygoid plates arise laterally and medially from the inferior surface of the side of the body and from the root of the greater wing. Passing vertically downward, the lateral and medial pterygoid plates diverge inferiorly and between them is formed an ovoid fossa, the pterygoid or scaphoid fossa. This area contains the origin of the medial pterygoid and tensor veli palatini muscles. The lower end of the posterior border of the medial plate appears to be continued as a slender, curved or hook-like process termed as pterygoid hamulus (hamular process, pterygoideus hamulus, pterygoid hooklet).⁷ The tensor veli palatini muscle from a relatively broad origin converges on a medial tendon, which passes around the hamulus of the medial pterygoid plate.⁸ At this point, the tendon is covered with a synovial sheet.⁹ The tendon is sufficiently broad to occupy most of the length of the hamulus, which is covered by its bursae.^{8,10} There is evidence that primary function of tensor veli palatini muscle is to open the eustachian tube and not to induce tension on the soft palate.¹¹ However, the tendon of these muscles forms the main element in the aponeurotic anterior portion of the soft palate. It is therefore, conceivable that the muscle is considerably influenced by the movements of the palate, even though it is not directly responsible for inducing tension.⁸

ETIOLOGY

Bursitis can be caused by an injury, infection, or a pre-existing condition. Minor infection or trauma can cause increase in the quantity of bursa fluid, leading to enlargement of the bursa resulting in pain and limitation of movement.¹² Bursitis caused by an injury usually takes time to develop. The traumatic injury is very common in the hamular bursitis patients. Anaesthesia intubations, swallowing a big bolus, yawning, sustained intraoral auscultation, overextended maxillary prosthesis, the traumatic strike during teeth brushing, bulimic patients and “fellatio” in child sexual abuse can generate this pathological state.¹² Individuals with more prominent hamuli are proven to be more susceptible to mechanical trauma.¹³ The term pterygoidhamulus syndrome was first used to describe a pain in the palatal and pharyngeal regions caused by an abnormally shaped pterygoid hamulus by Hjorting Hansen et al.¹⁴ Superficial presence of bursa in the hamular region and its functioning makes it more susceptible for inflammation.¹² Bursitis of the tensor veli palatini muscle caused by an osteophyte on the pterygoid hamulus, or bursitis of the tendon of the tensor veli palatini muscle as it winds around the pterygoid hamulus, elongation of the pterygoid hamulus, consistent repetition of minimal trauma to the overlaying soft tissue and the hamulus, hyper-

awareness, muscular dyscoordination, or a fracture after extensive and repeated manipulation might also be the possible causes for its occurrence.¹⁵

CLINICAL FEATURES

There are several signs and symptoms of bursitis of the hamular process.

- Palatal pain with the offending side will be significantly redder than the opposite side
- Swelling of the palatal mucosa over the hamulus
- Sharp localised pain in the hamular region and elongated hamuli will be evident as a firm swelling or enlargement under the mucosa of the soft palate on palpation
- Hamulus will be tender to palpation
- Ear pain
- Difficulty and pain with swallowing

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, retroorbital pain, headaches and hypoesthesia.⁶ These patients often report hearing disorders such as clicking or elevated noise sensitivity and dysfunction of muscles.¹⁵ Virtually everyone suffering from this bursitis will report a history of seeing numerous physicians to discover the cause of their symptoms.⁷

Hamular process palpation is made by oral access, manually (Fig 1) or with a blunt instrument in a careful manner reaching the posterior and medial zone of the maxillary tuberosity. The reported pain is frequently localised 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.⁶



Fig 1: Shows Palpation of Hamulus region

TABLE 1: ENLISTS THE VARIOUS DIFFERENTIAL DIAGNOSES FOR HAMULAR BURSTITIS

Differential diagnosis
Eagle's syndrome
Temporomandibular disorders
Geniculate ganglion neuralgia
Glossopharyngeal neuralgia
Cyst and tumors
Otitis media
Foreign bodies
Burning mouth syndrome
Impacted third molars

DIAGNOSIS

The diagnosis of hamular process bursitis should be based on the reported history, physical examination findings, and the success of the diagnostic anaesthetic infiltration into the hamular region.⁷ Dentures should be examined as ill-fitting maxillary dentures can precipitate this problem. Infiltration of local anaesthesia can be an excellent diagnostic aid when differentiating hamular pain from other possible causes.¹⁵

Radiographs of the hamulus and pterygomaxillary region should be obtained to determine whether the hamulus is fractured, whether an osteophyte is present on the hamular process producing inflammation of the bursa, or for any other abnormal findings. The Lateral cephalometric view is useful in evaluating the entire hamulus.⁷ Other radiographs which can be used are submentovertex and tomography. This small anatomic structure is difficult to image by conventional radiography because of superimposition and distortion. CT scan can be performed in axial and coronal planes with 3D views for diagnosis and treatment of this region. When 3D imaging is required to visualise anatomic structures, such as processes of sphenoid bone, hard/soft palate, and oropharynx, CBCT should be preferred over a CT image.¹⁶ These images are an excellent aid to rule out skeletal pathology, but they cannot confirm a hamulus pain syndrome. Infiltration of local anaesthesia (LA) to the hamular base and comparison of clinical findings in the left and right sides are most important when arriving at a diagnosis.¹⁵

If the correct diagnosis is not made at an early stage, the patient may be the victim of mismanagement leading to a psychological upset which clouds the initial complaints even more. This vicious circle needs to be interrupted. This pathology, in chronic states, can be responsible for the amplification of the pain perceived by the central excitation effect and can be responsible for occurrence of atypical pain.¹⁵

DIFFERENTIAL DIAGNOSIS

The hamular zone deserves special clinical attention especially in the differential diagnosis of the wide variety of craniocervical pains. The pain in this zone is so intense that it can be confused as neuropathic pain.^{6,17} Table 1 lists the various differential diagnosis for hamular bursitis. As all these entities produce palatal and pharyngeal pain so they should be ruled out before coming to the diagnosis of hamular bursitis.

Eagle's syndrome causes pain in the throat on swallowing similar to HB but in radiograph elongated styloid process will be seen in Eagles syndrome. Temporomandibular disorders causes pain on opening and closing of the jaw, other symptoms like limited mouth opening, clicking etc. will be present which is not seen in HB. Glossopharyngeal Neuralgias cause severe lancinating pain in the throat, difficult to differentiate from HB but glossopharyngeal Neuralgia pain is usually relieved on topical application of LA on tonsillar pillars where as in HB, infiltration of LA on the maxillary tuberosity area only will relieve the pain. Otitis media presents similar presentation as that of HB but with the presence of signs of infection of ear, pus discharges etc. Vague symptoms, more diffuse involvement, burning type of pain is reported in burning mouth syndrome than in HB. Pericoronitis of maxillary third molar clinically there will be presence of inflamed pericoronal flap with difficulty to open the mouth. Buccally erupted upper thirds molar also can cause pain. Thereby, ruling out these entities makes the diagnosis of hamular bursitis much less complicated.

TREATMENT

There is no generally accepted protocol for the treatment for HB. Treatment may be conservative or surgical, dependent on the actual cause of the pain.¹⁷ If the patient is suffering from a true bursitis of the bursa of the tensor veli palatini muscle as it winds around the hamulus and no hypertrophy of the bursa has occurred, conservative therapy is generally successful.⁷ For palliative or conservative treatment, the source of trauma or irritation should be removed. The infiltration of 1 ml of dexamethasone 4mg per ml with previous anaesthesia is suggested. In addition, the patient should take anti-inflammatory medications such as ibuprofen, 600 mg to 800 mg every 6 hours and be given a re-evaluation in 10 to 14 days. If the patient reports improvement, this injection procedure should be repeated, the anti-inflammatory medication should be continued, and re-evaluation should be scheduled approximately every 2 weeks. These procedures should be repeated as needed with increasing time intervals between appointments.⁷

If conservative treatment proves unsuccessful, surgical management should be considered. Unfortunately, this simple surgical procedure is rarely indicated 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. More often, after surgical exposure of the hamulus through further blunt dissection, the tensor veli palatini muscle and tendon are exposed, and any existing osteophytes are carefully removed from the hamulus. In addition, if fibrotic enlargement of the bursa is visually confirmed, the excess fibrous tissue is removed and the bursa is slit along its long axis, allowing freedom of the muscle during contraction. The bursal sac is removed and the palatal incision is closed with interrupted sutures. If bony or fibrotic changes of the bursa are not found, a hamulotomy should be performed, or the hamulus should be fractured, by use of rongeur forceps. The bursa is removed, but the tendon of the tensor veli palatini is left intact if at all possible. The edges are smoothed with a round bur and the incision is closed.⁷ Wooten et al stress that leaving the hamulus in place and educating and reassuring the patient is adequate management.¹⁸

CONCLUSION

Hamular bursitis is a rare entity and can cause as the diagnostic dilemma in the field of orofacial pain. The difficulty in diagnosis of this condition arises because neurologic, myogenic, and psychogenic pain states in the facial region have considerable overlap in terms of the manifestation of their symptoms. With wide variety of causes responsible for the pain in the palatal and pharyngeal areas, pterygoid hamulus as a pain-inducing factor deserves special clinical attention in literature. Diagnosis of this condition at an early stage may well reduce the need for unnecessary and often invasive procedures that may not help the patient but only prolong the agony. The treatment for bursitis is radically different from that for the other pain states in this region.

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