Unmasking a rare etiology of Chronic throat pain in an Adolescent

Department of ENT, Head & Neck Surgery RMU, Rawalpindi

Demographics

Name: Miss Rumesha

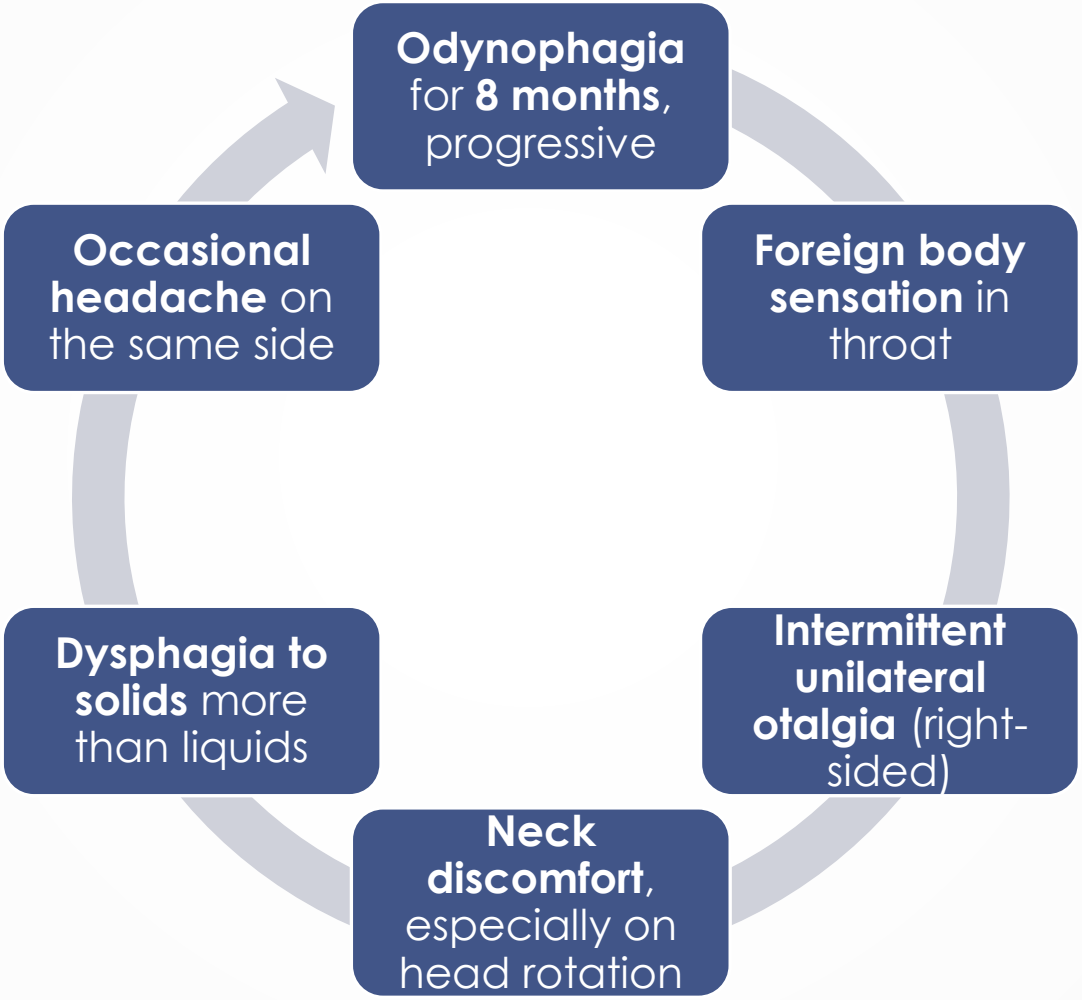
Age: 16 years

Gender: Female

Residence: Rawalpindi

Background: Previously healthy, no significant medical/surgical history. Normoglycemic,normotensive

Presenting Complaints



Systemic History

No fever or constitutional symptoms

No neurological deficits

No respiratory or GI symptoms matching severity

However, her daily life was severely effected due to absentees from education and work, absence from social events and inability to enjoy food due to pain

History of Presenting illness

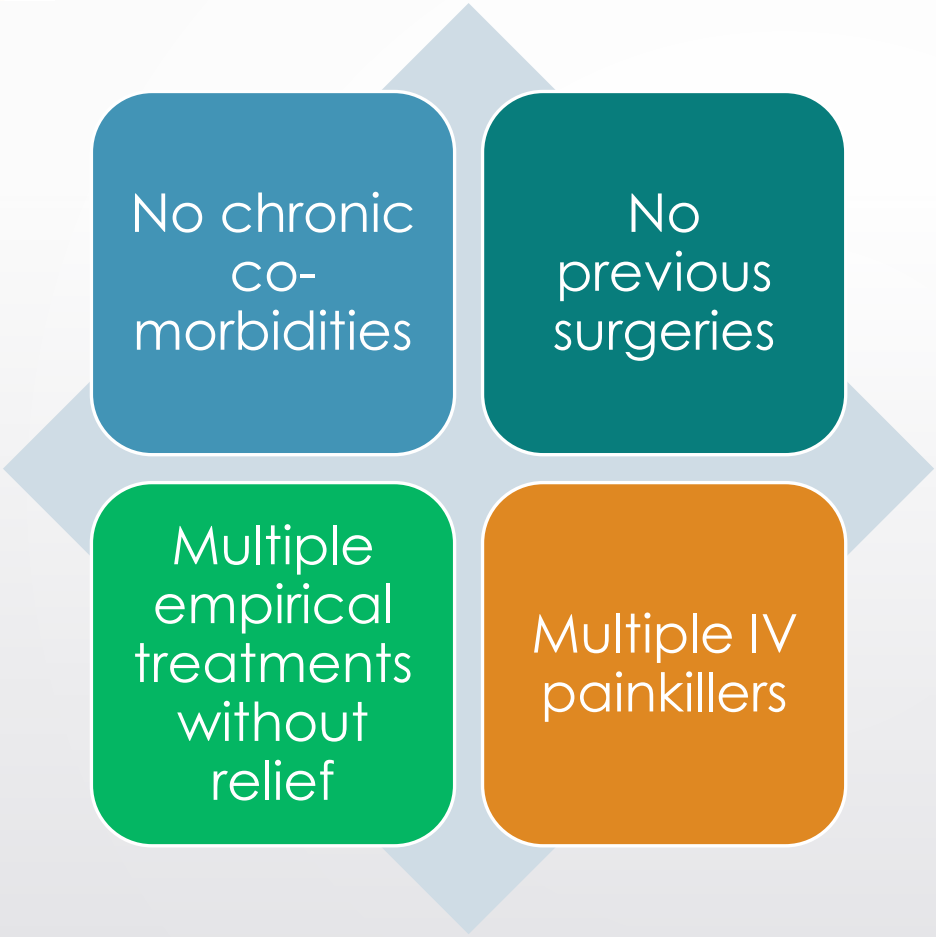
Initially developed mild throat pain associated with swallowing, which gradually progressed to persistent **odynophagia**.

Due to the severity of symptoms, she sought care at multiple outpatient departments.

Over several months, she underwent extensive gastrointestinal and medical evaluation, with multiple courses of empirical treatment including:

- Proton pump inhibitors, Antacids, Antibiotics, Analgesics, Antispasmodics

Despite these interventions, **symptoms persisted without improvement**



Past Medical & Surgical History

Drug & Allergy History

PPIs, antacids, antibiotics, analgesics used

No known drug allergies

Family & Socioeconomic History

- No family history of any malignancy
- Middle-class background
- Good family support

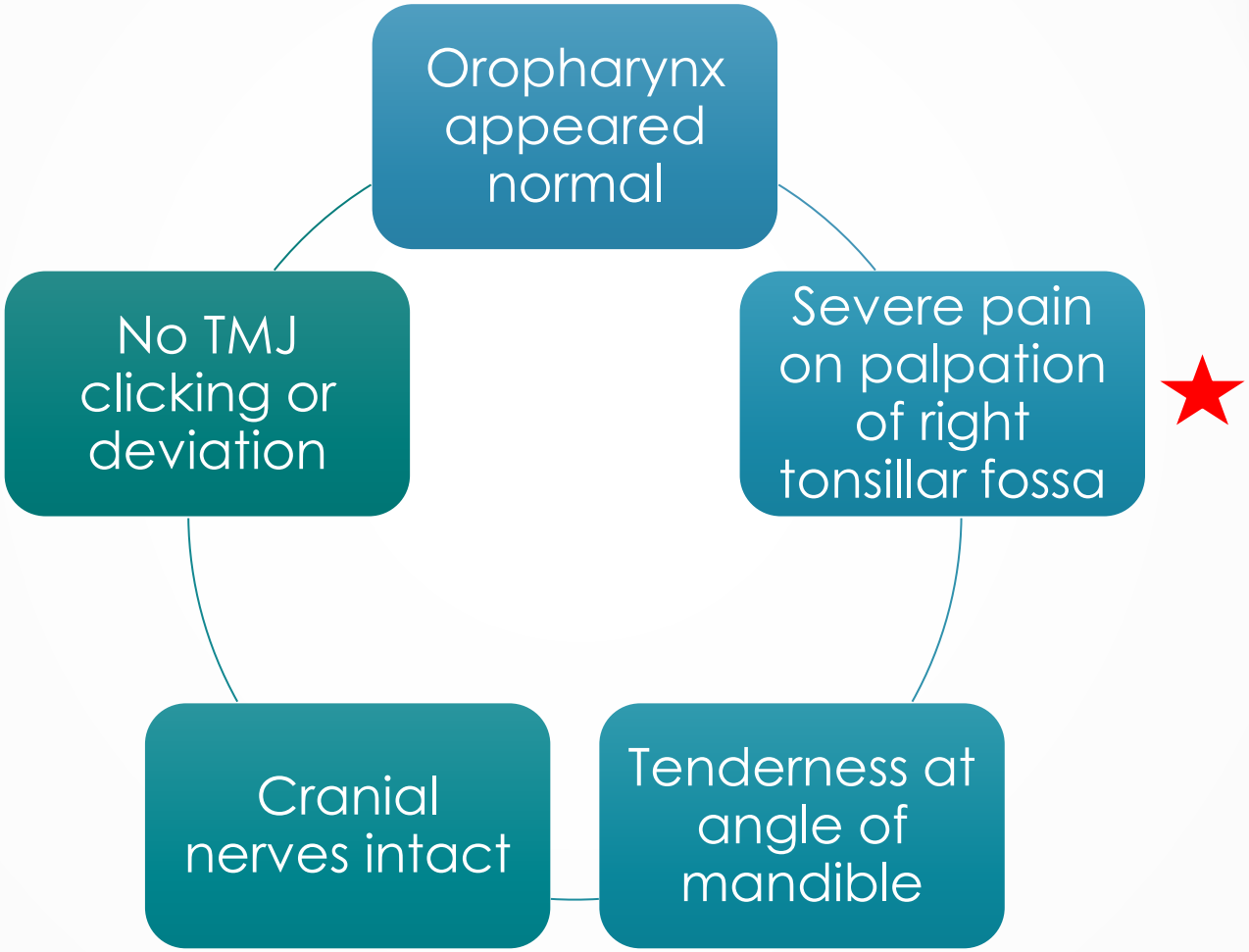
General Physical Examination

Vitally stable, afebrile

No cervical lymphadenopathy

No pallor, anemia, jaundice, clubbing or kolionychia

ENT Examination



Investigations – Baselines

- CBC, CRP – normal
- Liver/renal function test– normal
- Thyroid profile – normal
- Viral markers negative

Investigation : Upper G.I Endoscopy

- Two separate Upper G.I Endoscopy examinations performed
- Both normal with no mucosal abnormality
- No esophagitis or ulceration
- Initially misled toward GI cause

Consent & Vital Signs	Informed Consent taken, benefits, risks and alternatives explained and patients was vitally stable.

FINDINGS

Oro-pharynx: Normal looking epiglottis, aryepiglottic folds, vocal cords, pyriform sinus and post cricoid space.no visible mass/ ulceration seen.
Esophagus: Easy intubation. GE at 33cm from incisors . Normal looking mucosa with no growth , ulcer or varices .
Stomach: Mild antral gastritis.
Duodenum : D1 and D2 normal.

IMPRESSION	**As above**

Recommendations

NPO for 02 hours.
Cap Omega 40mg once daily for 7 days
Cap Cefim 400mg once daily for 5 days
Syp Ulsanic 2+2+2 after meals for 7 days
OMFS/ ENT consultation to rule out Glossopharyngeal neuralgia/ Eagles syndrome

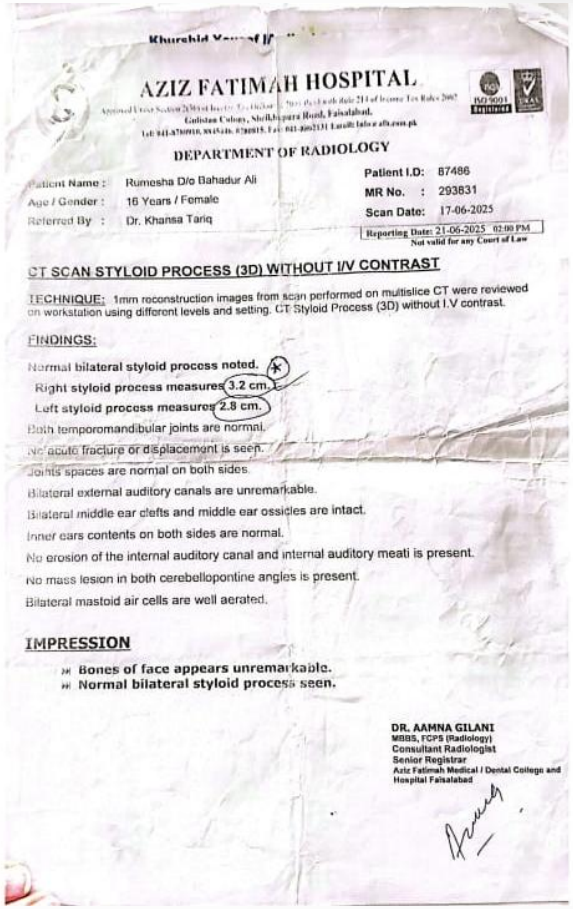
Investigation : CT Scan (3D)

Right styloid process elongated (~32 mm)

No Temporomandibular joint deformity

Medially angulated Right styloid process

No parapharyngeal space mass



AZIZ FATIMAH HOSPITAL

DEPARTMENT OF RADIOLOGY

Patient Name : Rumesha D/o Bahadur Ali
Age / Gender : 16 Years / Female
Referred By : Dr. Khansa Tariq

Patient I.D: 67486
MR No. : 293831
Scan Date: 17-06-2025
Reporting Date: 21-06-2025 02:00 PM
Not valid for any Court of Law

CT SCAN STYLOID PROCESS (3D) WITHOUT I/V CONTRAST

TECHNIQUE: 1mm reconstruction images from scan performed on multislice CT were reviewed on workstation using different levels and setting. CT Styloid Process (3D) without I.V contrast.

FINDINGS:

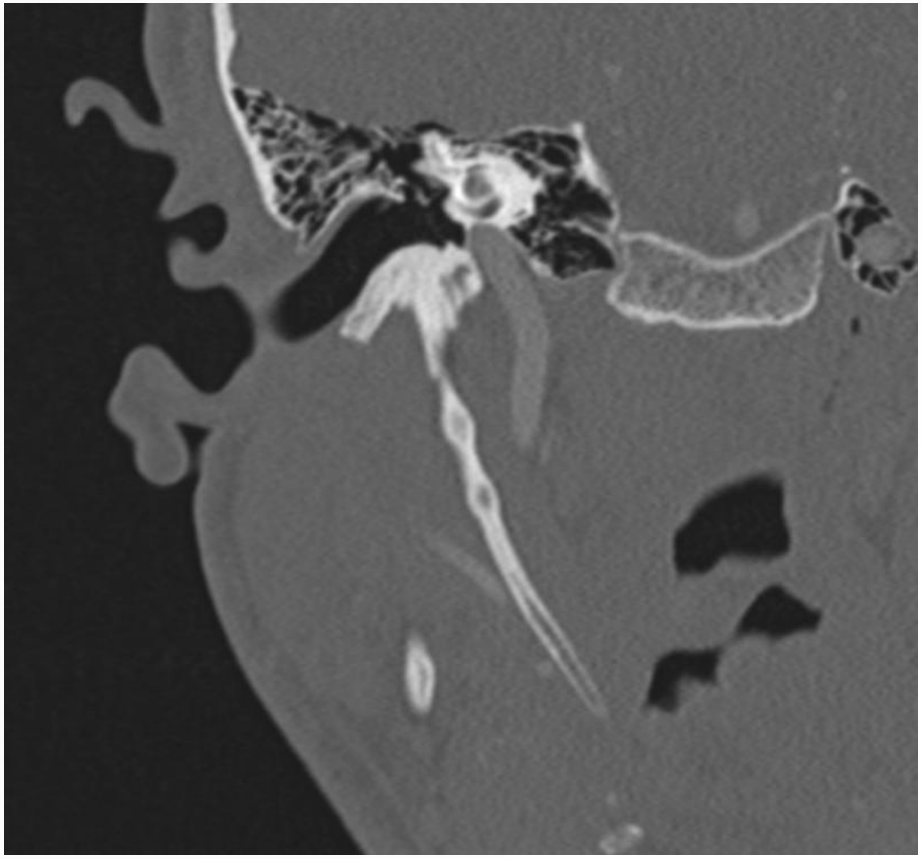
Normal bilateral styloid process noted.
Right styloid process measures 3.2 cm.
Left styloid process measures 2.8 cm.
Both temporomandibular joints are normal.
No acute fracture or displacement is seen.
Joints spaces are normal on both sides.
Bilateral external auditory canals are unremarkable.
Bilateral middle ear clefts and middle ear ossicles are intact.
Inner ears contents on both sides are normal.
No erosion of the internal auditory canal and internal auditory meati is present.
No mass lesion in both cerebellopontine angles is present.
Bilateral mastoid air cells are well aerated.

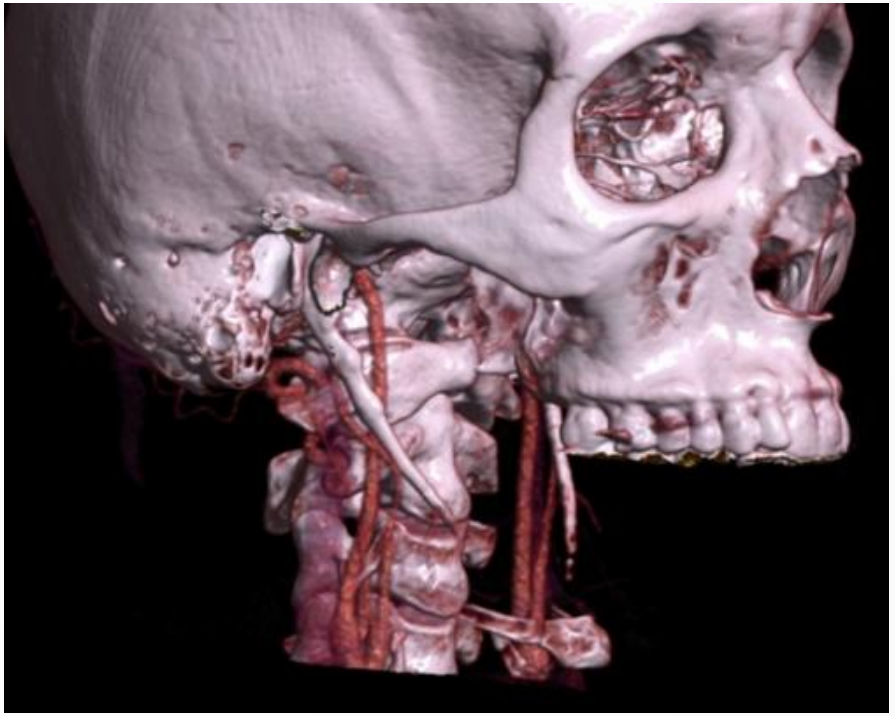
IMPRESSION

- Bones of face appears unremarkable.
- Normal bilateral styloid process seen.

DR. AAMNA GILANI
MBBS, FCPS (Radiology)
Consultant Radiologist
Senior Registrar
Aziz Fatimah Medical / Dental College and Hospital Faisalabad


12/14/2025





Differential Diagnosis

Based on literature and common misdiagnosis in reported cases:

Chronic Tonsillitis / Tonsilloliths

Usually accompanied by visible tonsillar pathology; absent in this case.

Glossopharyngeal Neuralgia

Severe paroxysmal throat/ear pain but no identifiable trigger point in tonsillar fossa.

Temporomandibular Joint Dysfunction

No jaw clicking, trismus, or tenderness over TMJ.

Myofascial Pain Syndrome / Cervical Muscle Spasm

Pain poorly localized; does not correlate with swallowing.

Differential Diagnosis

Reflux Esophagitis or Pharyngo-esophageal Disorders

Normal UGIE; no acid reflux symptoms that match severity.

Peritonsillar or Parapharyngeal Space Pathology

No swelling, trismus, or systemic signs.

Foreign body sensation due to Laryngopharyngeal reflux or globus pharyngeus

But classic styloid tenderness pointed toward Eagle's syndrome.

Multiple case reports note that **delayed diagnosis and unnecessary investigations**—especially UGIE—are common due to overlapping symptoms with GI and neuralgic disorders, which occurred in this patient.

Definitive Diagnosis

Eagle's Syndrome (right-sided)

- Elongated styloid process causing pharyngeal and neural compression

Treatment – Conservative

NSAIDS For Pain Reduction

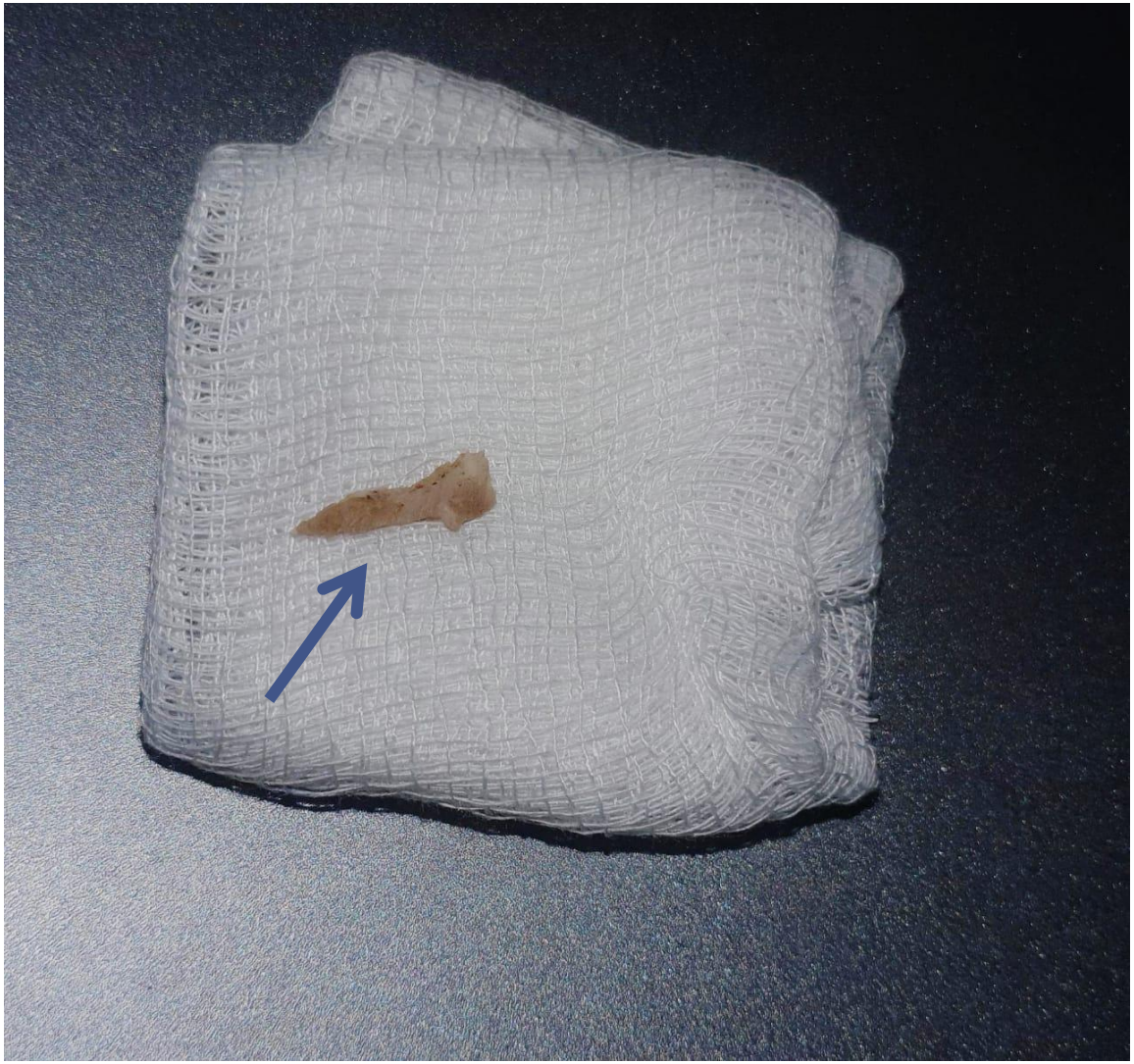
Neuropathic Agents (Carbamazepine, Pregabalin)

Local Steroid/Lidocaine Injections Into Tonsillar Fossa (Temporary Relief)

Treatment – Surgical

Transoral endoscopic approach

- Right sided tonsillectomy was done along with intraoral styloidectomy under general anesthesia.
- Tonsillar bed was sutured with vicryl 2.0
- Post Op Recovery was un remarkable.



Summary

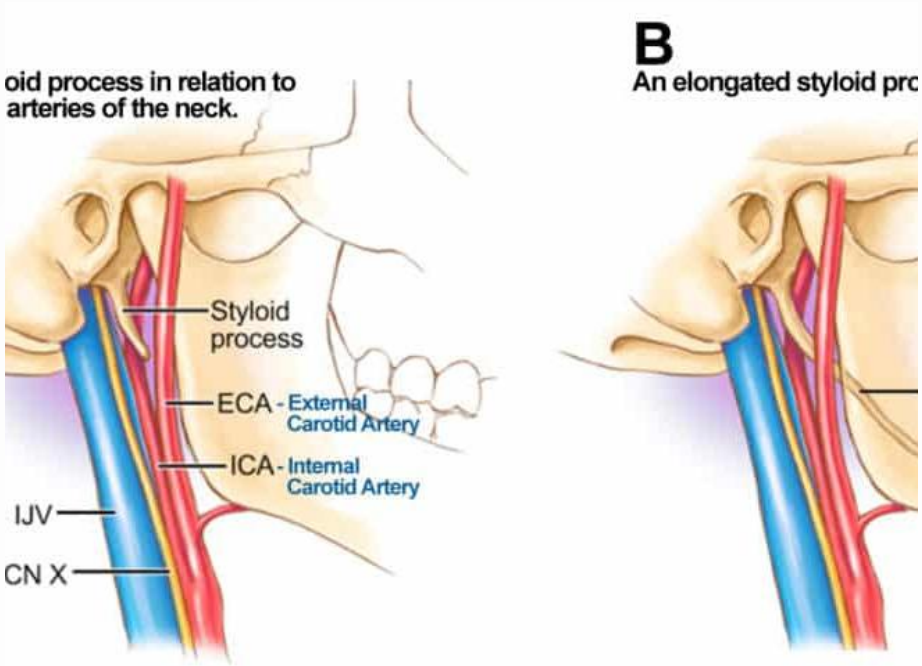
A 16-year-old female presented with chronic odynophagia and otalgia, misdiagnosed for months. Final evaluation at the ENT Department, Benazir Bhutto Rawalpindi, confirmed **Eagle's syndrome** on Ct Scan**.** This case highlights the importance of **early consideration** and **targeted ENT examination** in unexplained chronic throat pain to avoid diagnostic delay and patient morbidity.

Literature review

Eagle syndrome

- Eagle syndrome is a condition associated with an elongated (over-long) styloid process of the temporal bone and/or calcification / mineralization of the stylohyoid ligament.

Anatomical Note



The styloid process is a slender, pointed bone projection from the temporal bone, normally about 2-2.5 cm in length.

When length exceeds 2.5cm or when stylohyoid ligament calcifies, symptoms can occur.

Prevalence

Elongated styloid processes (or calcified ligaments) may be present in ~4% of the population.

But symptomatic less than 0.2%

Some studies shows a female predominance and mostly between 30 and 50 years

Pathophysiology

What leads to Eagle's syndrome?

Pathophysiology

One common hypothesis:

- Prior surgical trauma especially tonsillectomy
- Other micro-traumas in the oropharyngeal region may trigger metaplastic changes
- Granulation tissue formation
- And subsequent ossification of the stylohyoid ligament, leading to elongation

Symptoms

Irritation / compression of adjacent structures Depending on which adjacent anatomical structures are affected

Irritation/compression of nerves (e.g. Glossopharyngeal nerve)

Soft tissues/Vascular structures (carotid artery or pericarotid plexus) may be involved.

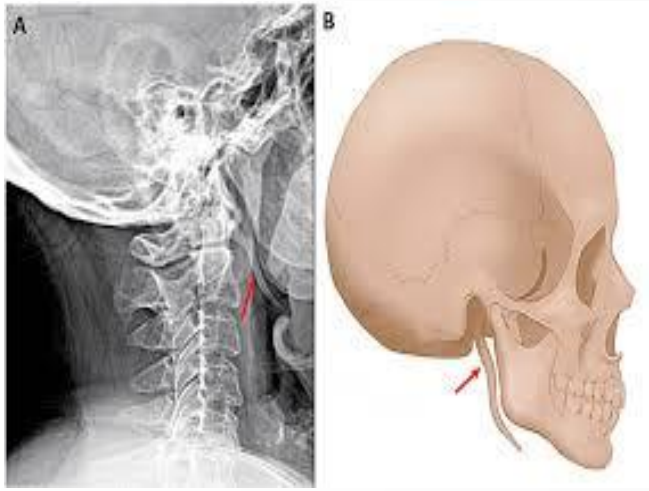
Clinical Subtypes

Classical eagle syndrome

Vascular/ Stylocarotid subtype

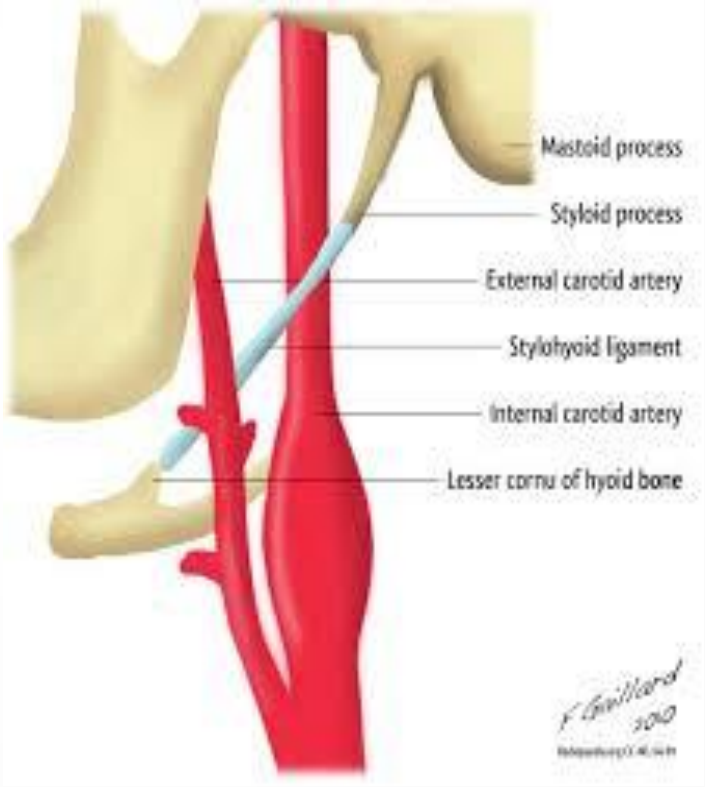
Classical eagle syndrome

Oropharyngeal and cervicofacial pain, throat pain, foreign-body sensation in throat, pain on swallowing (odynophagia), dysphagia, difficulty turning head, discomfort on head movement, sometimes otalgia, tinnitus, altered voice / dysphonia, globus sensation.



Vascular/Stylocarotid subtype

Compression/irritation of carotid artery or pericarotid plexus → may lead to vascular symptoms: pulsatile pain, dizziness, syncope, even cerebrovascular events such as dissection or transient ischaemic attack (TIA), especially if internal carotid artery involved.

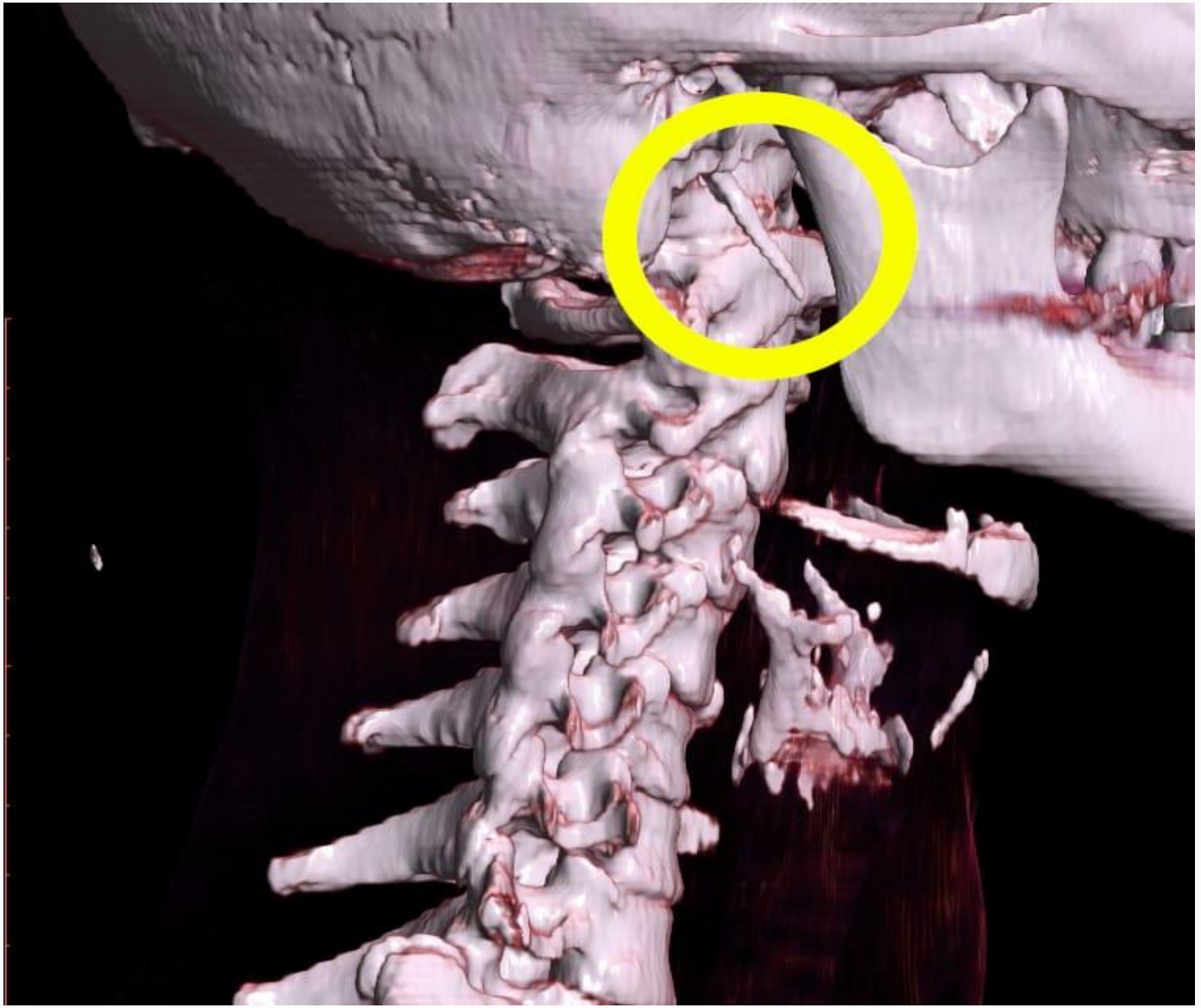


Diagnostic Strategies

Clinical suspicion is key -based on history

Radiological / Imaging investigations (gold standard)

- Computed tomography (CT) scan of the skull / neck — especially 3D reconstructed CT — is considered the gold standard for confirming elongation of the styloid process or calcification of the stylohyoid ligament.



Diagnostic Strategies

CT Angiography (in suspected vascular subtype) may be useful to assess impact on vascular structures (carotid artery, pericarotid plexus).

Differential diagnosis

Temporomandibular Joint (TMJ) Dysfunction	Glossopharyngeal neuralgia	Tonsillitis / Chronic Tonsillitis
Dental Pain / Periapical Abscess	Hyoid Bone Syndrome / Stylohyoid Tendinitis	Cervical Spondylosis / Cervical Radiculopathy

Treatment strategies

Medical / Conservative Management

Analgesics
NSAIDS(eg ibuprofen,diclofenac)
Neuropathic Pain Modulators – in case of neurogenic pain
Carbamazepine
Pregabalin
Amitriptyline(low dose)
Local Steroid and analgesic infiltration
Can be done for diagnostic purpose and for temporary relief

Note: conservative treatment may provide relief but often insufficient in many symptomatic cases.

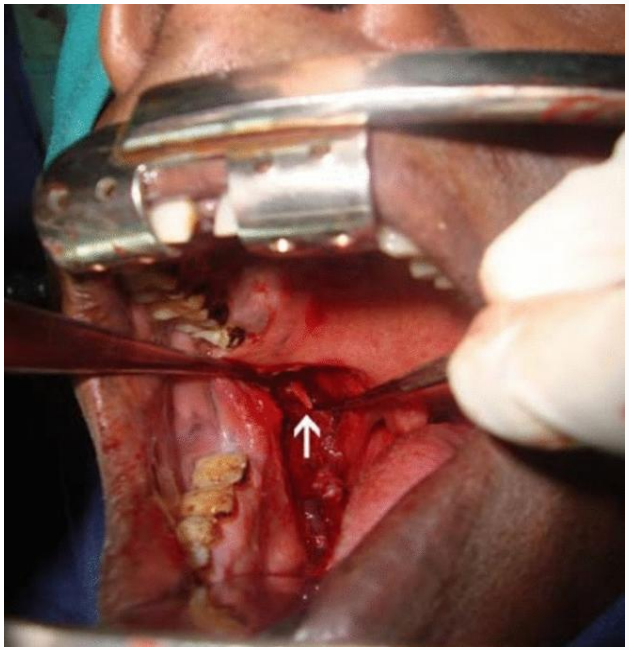
Surgical Treatment

Resection (styloidectomy) — removing or shortening the elongated styloid process is the mainstay when symptoms are significant or refractory.

Surgical strategies: Intra-oral

Through the mouth

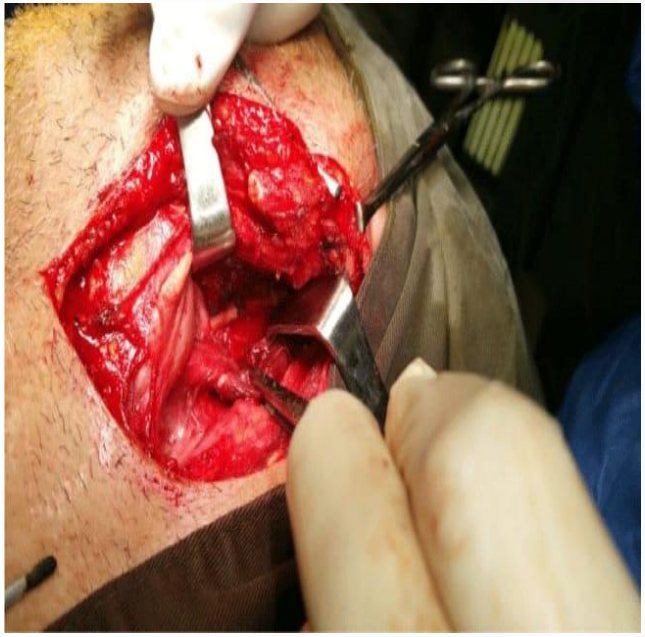
- Avoids external neck scar
- Good for medial styloid elongation.
- Limited exposure
- Higher risk of injury to ICA/IX/X/XII



Surgical strategies:Extra-oral

Cervical: through neck incision

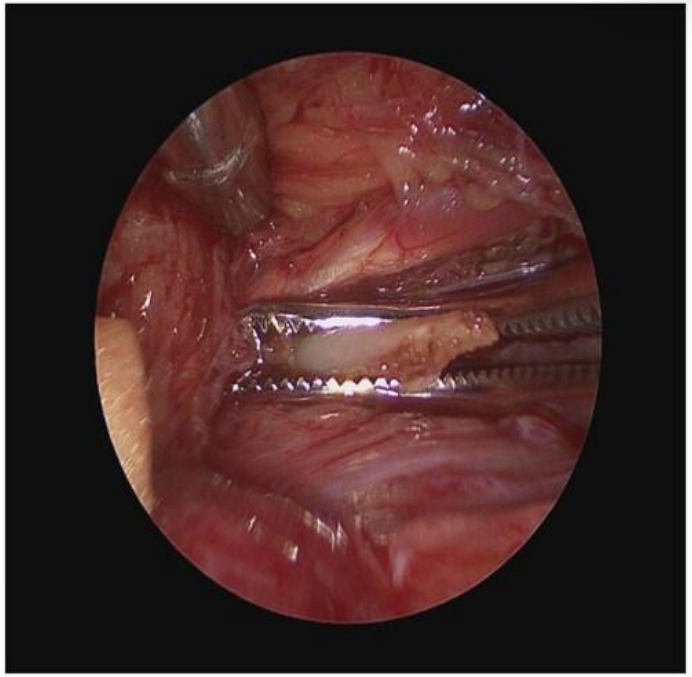
- Better exposure
- Allows complete styloidectomy from skull base if needed.
- Better identification & protection of ICA, IJV, CN VII, IX, X, XI, XII.
- Lower infection risk.
- Allows management of associated Eagle variants (vascular compression).



Surgical strategies: Endoscopic

Endoscope-assisted or minimally invasive cervical styloidectomy:

- Newer techniques for reducing morbidity / improving recovery.



Surgical strategies

For vascular subtype or cases involving vascular compromise (e.g. Carotid artery dissection), some authors recommend combining vascular treatment (e.g. Stenting) + styloidectomy to prevent complications / recurrence.

Eagle syndrome is a real — though rare — cause of cervicofacial / oropharyngeal pain and/or vascular symptoms due to elongation or calcification of the styloid process / stylohyoid ligament.

Diagnosis requires a combination of clinical suspicion + physical exam + imaging (CT/CT-Angio).

Conservative treatment may help in mild cases, but styloidectomy (surgical) remains the definitive therapy for most symptomatic cases.

Given variability and overlap with other conditions, multidisciplinary awareness and careful differential diagnosis are crucial.

References

Pagano S, et al. *Eagle syndrome: An updated review*. Provides a current overview of clinical presentations, types (classic & vascular), diagnosis, and treatment considerations. 2023. PMC

Williams DM, et al. *Eagle Syndrome: Case Report, Literature Review*. Discusses contemporary literature on presentation and management. 2024. SAGE Journals

Tadjer J, Béjot Y. *Vascular variant of Eagle syndrome: a review*. Focused review on vascular complications (syncope, TIA, stroke) in Eagle syndrome. 2024.


THANK YOU