Retropharyngeal Abscess Complicated by IGV Thrombosis

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PRESENTATION OF CASE

A 20-year-old lady presented with neck swelling with difficulty in swallowing and trismus. On clinical examination there was a diffuse swelling involving the neck. Lateral radiograph of the neck was taken which showed straightening of the cervical spines with 10-12 mm widening of the prevertebral space (figure 1). Computed Tomography scan of the neck showed hypodense fluid collection in the retropharyngeal space from C4-C8. Ultrasonography of the neck showed thrombosis in bilateral internal jugular vein. An eccentric soft tissue plaque was seen along the mid internal jugular vein measuring 1.8 mm. USG Doppler showed partial thrombosis of bilateral IGV showing ulcerated plaque with luminal narrowing approximately 30% on right side and a soft tissue plaque causing luminal narrowing of up to 25% on left side. Sputum for acid fast bacilli and Mantoux test were negative. Patient was taken up for cervical exploration and around 20-25 cc of pus was drained by putting an incision over maximum bulge over posterior pharyngeal wall.

CLINICAL DIAGNOSIS

Retropharyngeal Abscess

DIFFERENTIAL DIAGNOSIS

Other deep neck space infections (like prevertebral abscess, Ludwig's angina), foreign body in aerodigestive tract, pneumonia, mediastinitis, epidural abscess, oral cavity infections, epiglottitis, pharyngitis.

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DISCUSSION OF MANAGEMENT

She was started on broad spectrum intravenous antibiotics along with Ryles tube feeding. The neck swelling subsided within 4-5 days with improvement in neck movements. Trismus recovered completely within a week. (Figure 2) Patient had an uneventful recovery and was discharged in 10 days. Aspirate from the abscess was sent for pus culture sensitivity which showed no growth of microorganisms. This is probably attributed to usage of antibiotics prior to the procedure. Follow up at 2 weeks showed no evidence of swelling and the thrombosis also resolved.

PATHOLOGICAL DISCUSSION

A retropharyngeal abscess is a suppurative infection of the deep spaces of the neck. In adults, retropharyngeal abscesses are rare in adults and can occur as a result of local trauma, such as foreign body ingestion (fishbone), or instrumental procedures (laryngoscopy, endotracheal intubation, feeding tube placement, etc.), or in the particular context of an associated disease.1,2 Risk factors for retropharyngeal space infection include poor oral hygiene, diabetes, immunocompromised, and low socioeconomic status.

The patient of clinically retropharyngeal abscess (RPA) presents with symptoms of sore throat, fever, neck stiffness, pain with neck extension, while respiratory findings (airway obstruction or stridor) are rare. When the retropharyngeal infection is present, the depth of the prevertebral space will be increased on the lateral neck x-ray. In healthy individuals, the upper limit of normal of the prevertebral space is 7 mm at C2 and 14 mm at C6 in children. In healthy adults, the upper limit of normal of the prevertebral space is 7 mm at C2 and 2 mm at C6. A width of 30 mm at C6 indicates abscess collection.3

CT of the neck with intravenous contrast is the best imaging study to evaluate patients with a retropharyngeal abscess. In children, ultrasound is preferred as it does not involve radiation and is portable. In experienced hands, US can help determine the size and location of the abscess.3

In older children and adults, trauma to the posterior pharynx resulting in retropharyngeal infection is the more likely mechanism through which retropharyngeal abscess originates. After suppurative adenitis or trauma results in the seeding of the retropharyngeal space, cellulitis results and eventually leads to phlegmon and abscess formation in the retropharyngeal space. Retropharyngeal abscesses are often polymicrobial infections. Bacteria which commonly contribute to these infections include Group A Streptococcus pyogenes, Staphylococcus aureus, Fusobacterium, Haemophilus species, and other respiratory anaerobic organisms.1,2,3 In younger children lesser than 5 years, the retropharyngeal space contains lymph nodes chains that drain the nasopharynx, adenoids, posterior paranasal sinuses, and middle ear. An antecedent upper respiratory tract infection can result in suppurative adenitis of these retropharyngeal lymph nodes and eventual abscess formation.

Empiric antibiotic therapy should provide coverage for group B streptococcus, Staphylococcus aureus and respiratory anaerobes. Surgical intervention in the form of incision and drainage. Internal jugular vein thrombosis is a rare complication of retropharyngeal abscess and has the potential to spread to adjacent structures and to the bloodstream and cause sepsis. The retropharyngeal space is posterior to the pharynx, bound by the buccopharyngeal fascia anteriorly, the prevertebral fascia posteriorly, and the carotid sheaths laterally. It extends superiorly to the base of the skull and inferiorly to the mediastinum.

Retropharyngeal abscess is a rare infection in adolescents with serious consequences.4 Retropharyngeal abscess if untreated can progress to complications like airway obstruction, mediastinitis, aspiration pneumonia, epidural abscess, jugular venous thrombosis, necrotizing fasciitis, sepsis, and erosion into the carotid artery. These complications are associated with high morbidity and mortality.5 One of the rare complications is suppurative thromboembolitis os internal jugular vein. Suppurative thromboembolitis of the internal jugular vein (IJV) is a venous thrombosis due to the infectious involvement of the carotid sheath vessels with bacteria and is seen in association with intravenous catheters or with certain deep neck infections.6

Computed Tomography scan of the neck with contrast is the most useful study to detect internal jugular vein thrombosis.7 Due to the frequency of pulmonary emboli that accompanies this condition, a CT scan of the chest is often performed. An ultrasonography is also useful to evaluate for jugular vein thrombosis and can be used to assess for thrombus extension.7

Broad spectrum Intravenous antibiotics are the mainstay of treatment in the treatment of suppurative thromboembolitis. Utilisation of Anticoagulation therapy in septic thromboembolitis is controversial. Despite the potential life-threatening complications mentioned in the literature, the role of anticoagulation is not recommended in the absence of extension of the thrombus.8

In predisposed individuals certain deep neck infections by a certain strain of bacteria which produces endotoxins and hemagglutinin leads to further invasion, endothelial inflammation, platelet aggregation, and a suppurative thromboembolitis. Early in the course of thromboembolitis, while the thrombus is firmly attached, antibiotics may be all that is necessary to treat the condition.3

Therefore, in a patient with deep neck space infection with pharyngitis, septic pulmonary emboli, and persistent fever despite antimicrobial therapy, one should suspect jugular vein suppurative thromboembolitis. Further studies can elucidate the most appropriate management of these thrombotic events, possibly not requiring anticoagulation to improve clinical outcomes in patients.
Figure 1. X-Ray of Soft Tissue of The Neck Showing Paravertebral Widening

Figure 2. Post-Operative Picture of the Patient Showing Improved Mouth Opening

REFERENCES


