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CHRONIC RETROPHARYNGEAL ABSCESS ASSOCIATED WITH GRANULOMATOUS LYMPHADENOPATHY IN CHILDREN

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ABSTRACT

Retropharyngeal abscess is the most common infection of a deep cervical space in children. Chronic retropharyngeal abscess and granulomatous lymphadenopathy may be caused by infectious and non infectious disease. A 12 years old girl with one year history of cervical node in the left anterior cervical region associated to bulging of the posterior wall of the oropharynx. Chronic retropharyngeal abscess is an uncommon condition of insidious and dragged evolution. Etiological diagnosis in undefined in many cases. A high proportion of cases are associated to extra pulmonary tuberculosis. Therefore a high suspicious is necessary.

KEYWORDS: Pharynx; Neck; Granulomatous disease; Tuberculosis; Lymphoid tissue

1.1. INTRODUCTION

Retropharyngeal abscess is an infection of a deep cervical space, most common in children, with an incidence of approximately 4 cases per 100.000 inhabitants.[1] This condition may be a complication of surgical manipulation of the posterior pharyngeal wall or of upper airway infection.[2,3] and may be associated with life-threatening complications such as mediastinitis.[4]

Chronic retropharyngeal abscess is an infrequent entity and there are only few cases reported. Most of these cases are associated with extra-pulmonary tuberculosis.[5-8]

1.2. Objective

To describe a case of chronic retropharyngeal abscess in a 12 years old patient associated with granulomatous lymphadenopathy,

1.3. Case

A 12 years old girl was admitted to the ENT outpatient clinic with a history of cervical node in the left anterior cervical region for almost a year. There was no progressive growth, signs of inflammation and supuration. On admission examination of the oral cavity revealed bulging of the posterior wall of the oropharynx. The patient denied fever, dysphagia, sore throat, shortness of breath, night sweats and weight loss. She had no comorbidity, history of medication use and previous hospitalizations. Vaccination was updated. There was no family history for comorbidities.

On cervical palpation there was a level III node on the left, of approximately 2 cm, mobile, cystic and painless. Nasal endoscopy was seen bulging of the posterior wall of oropharynx on the left. There were no other findings on physical examination.

Complete Blood cell count and chest X-ray were normal. Computed tomography (CT) and magnetic resonance imaging (MRI) of the neck showed a hypodense collection in the retropharyngeal space and a node in level III on the left, of approximately 2 cm (Figures 1 and 2).

Patient was admitted for lymphnode excision and drainage of the retropharyngeal space in the operating room. An amount of 20 ml of purulent discharge was drained in retropharyngeal space. The patient was then admistered intravenous antibiotics.

Histopathological examination of lymph node reported chronic inflammation of granulomatous type with epithelioid cells and multinucleated giant cells and necrosis in 20% of the sample. There were no cellular atypia or malignancy signs.

Serology was negative for HIV, toxoplasmosis, Epstein-Barr Virus, rubeola and CMV. Bacterioscopy and cultures for bacteria, mycobacteria and fungi of the abscess were negative. The patient was discharged after 3 days of intravenous antibiotics and has remained asymptomatic for 4 months.

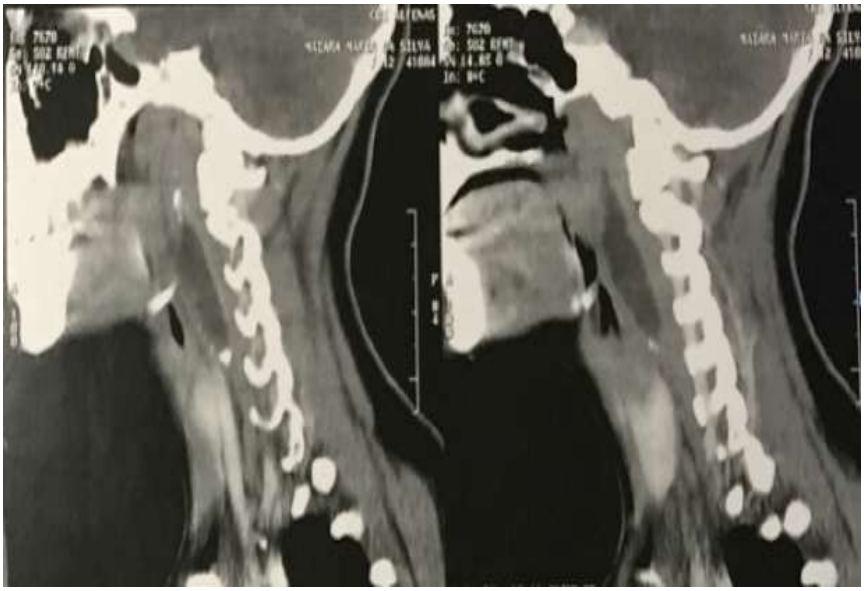

Figure 1. Computed tomography of neck in sagittal section with hypointense content on retropharyngeal space extending from C2 to C5.

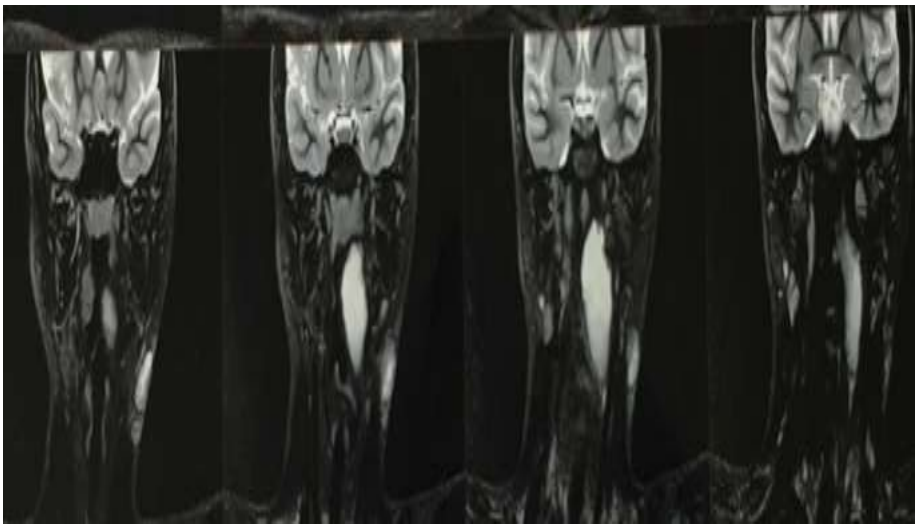

Figure 2. Magnetic resonance imaging of neck in coronal section in T2 with hyperintense content in retropharynx region and node in level III on the left, of approximately 2 cm.

1.4. DISCUSSION

The retropharyngeal space is a virtual deep spaceof the neck that extends from the clivus to the superior mediastinum. It is intimately to the esophagus and the pre-vertebral muscles.[2, 3].

It is limited anteriorly by the buccopharyngeal fascia; posteriorly by the pre vertebral fascia and laterally by the carotid space. The alar fascia divides the retropharynx in retropharyngeal space itself (anteriorly) and danger space (posteriorly).

The contents of the retropharyngeal space consist of fat and lymph nodes, known as Rouviere lymph nodes. These lymph nodes begin to regress from after 4 years of age and this explains why before this inflammation and infection of this space is more common. These nodes receive the drainage of the sinuses, nasal cavity and pharynx.

Pathologies of the retropharyngeal space can be classified in:

- ***Primary tumors***: lipoma, liposarcoma and synovial sarcoma
- ***Tumors extension***: squamous cell carcinoma of the nasopharynx, larynx, oropharynx and sinonasal. Lymphoma, chordoma, spinal cord tumors.
- ***Metastases***: squamous cell carcinoma of the nasopharynx, larynx, oropharynx and sinonasal. Lymphoma, melanoma, esthesioneuroblastoma and thyroid carcinoma.
- ***Other***: branchial cyst, ectopic parathyroid adenoma, vascular and lymphatic malformation, hemangioma, leiomyoma, osteomyelitis and abscess.[2]
- Lymph node enlargement in children may be secondary to neoplastic processes, congenital abnormalities and lymph node reaction to upper respiratory tract infections.[9, 10].
- The main causes of enlarged lymph nodes in children can be divided into infectious and non-infectious.[11]

- **Infectious:**
- ***Bacterial***
- Reactive
- Actinomycosis
- Cat scratch disease
- Nocardiosis
- Tuberculosis
- M. tuberculosis No

- ***Viral***
- HIV
- EBV

- ***Fungal***
- Histoplasmosis

- Paracoccidioidomycosis

- **Non infectious**
- Chronic granulomatous disease
- Chediak Higashi Syndrome
- Castleman's disease
- Kawasaki Disease
- Lymphoproliferative disease

Retropharyngeal abscess is a common entity in children, due to the presence of Rouviere lymph nodes. The mean age of these patients is 5.1 years. The most common bacteria envolved are: Group A Streptococcus, Staphylococcus and anaerobic.[3, 12]

The etiology is related to trauma of the posterior wall of pharynx (intubation and foreign body), upper respiratory tract infection and post adenoidectomy.[3]

Clinical presentation consists of the triad: fever, stiff neck and sore throat. There may also be trismus, dysphagia, neck pain, limitation of neck movement and dyspnea.[13] On cervical palpation lymph nodes may be enlarged or not. There may be a positive "rock manouver ", which consists of neck pain in the lateral displacement of the larynx. Bulging of the posterior pharyngeal wall may bem seen on nasal endoscopy or even on examination of the oropharynx.[3]

Image evaluation is of great importance. Computed tomography (CT) allows differentiation between initial inflammatory processes and deep collections. In retropharyngeal space cellulits one may observe thickeningof retropharynx soft tissue, and areas of hypodensity with absence of central and peripheral hypodense enhancement. In the presence of a phlegmon central hypodense oval or round shape with discrete and incomplete peripheral enhancement. May be seen an abscess will be described as irregularly shaped hypodense central area with peripheral enhancement area.[14]

Treatment in cases of cellulitis and phlegmon can be conservative with intravenous antibiotics and systemic corticosteroids. For patients with abscess or failure of clinical treatment after 48 hours the treatment of choice is surgical drainage followed by parenteral antibiotics.[3, 12]

Granulomatous reactions are immune-mediated reactions that represent a chronic inflammation. Granulomas are structures composed by epithelioid cells, multinucleated macrophages, lymphocytes and fibroblasts.[15] The granulomatous lymphadenitis, as described in the present case, can be classified in infectious and noninfectious.[5-8, 16, 17]

- **Infectious**
  - Tularemia
  - Cat scratch disease
  - Yersinia
  - Lymphogranuloma venereum chlamydia
  - Tuberculosis
  - Mycobacteria not BK
  - Toxoplasmosis
  - Leprosy
  - Syphilis
  - Brucellosis
  - Fungi

    - Cryptococcosis
    - Histoplasmosis
    - Paracoccidioidomycosis

- **Non infectious**
  - Berylliosis
  - Non-Hodgkin's lymphoma
  - Hodgkin lymphoma
  - Reaction like sarcoidosis
  - Crohn's disease
  - Sarcoidosis

Among the possible related diseases that may manifest a retropharyngeal abscess and granulomatous lymphadenitis extrapulmonary tuberculosis is of particular importance since it is endemic in Brazil. In most cases it is related to tuberculosis involving the cervical spine, but can affect directly the retropharyngeal space due to lymph nodes spread in that space.

Clinical and physical examination are essential for diagnosis, but histopathological study, Gram staining diagnostic tools with Ziehl-Neelse technique and culture in Löwenstein-Jensen are the main tools. Recently the use of polymerase chain reaction (PCR) has become valuable in extrapulmonary forms of tuberculose. Image studies, such as CT and RMI are useful in identifying the abscess location and measurement of dimensions as well as planning surgical exploration.[5, 18-24]

1.5. CONCLUSIONS

Although cervical abscess are a common entity in children, chronic retropharyngeal abscess is an uncommon condition of insidious and dragged evolution. The etiological diagnosis is challenging and in many cases may not be defined, although a high proportion of cases may be associated with extra pulmonary tuberculosis.

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