Tuberculosis Lymphadenitis Presenting a Diagnostic Dilemma- A Case Report
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Abstract
Swellings of the submandibular region are a frequent observation in children with deep carious lesions of primary molars and almost always lead the clinician to suspect cellulitis caused by a dental infection. Presented here is one such case which was initially diagnosed as a swelling arising from dental etiology and treated accordingly. No improvement in the child’s condition led to further extensive investigations and the case was diagnosed as tuberculosis lymphadenitis.

Keywords: Diagnostic Dilemma, Dental Infection, TB Lymphadenitis.

Introduction
Tuberculosis of the lymphatic system is one of the most common of all extra-pulmonary tuberculosis, second only to tuberculous pleurisy. Its involvement of the cervical lymph nodes has been known for centuries as scrofula or the King’s Evil. The unusual features of TB lymphadenitis are its sex and age distribution, being more common in females and in the younger age groups, in contrast to pulmonary tuberculosis which is more common in males and in the older age group.

In a typical outpatient paediatric clinic of a hospital in India, children with enlarged cervical lymph nodes are a common presentation. With prevalence as high as 1.5%, tuberculosis is still rampant in this part of the world and is responsible for involvement of lymph nodes in almost 30-40% of cases. In rural India, the prevalence of tuberculosis lymphadenitis in children up to 14 years of age is 4.4 per 1000. Therefore, on initial examination tuberculosis is often attributed as the underlying cause in most cases of cervical lymphadenopathy.

However, the same cannot be said of the paediatric dental setting wherein patients with severe oral and dental infections frequently present with enlargement of the cervical lymph nodes. Further, lymphadenitis may be the only manifestation of the disease and there may not be associated constitutional symptoms, such as low-grade fever, loss of weight, cough or other respiratory symptoms. It is not unlikely, therefore, that tuberculosis may be overlooked as a possible diagnosis in patients visiting a dental facility with swellings of the lower face and concomitant enlargement of the cervical lymph nodes.

What follows is a report of one such confounding case of tuberculous lymphadenitis co-existing with a facial swelling of dental origin, which presented a diagnostic dilemma and resulted in much discomfort and inconvenience to the child and his parents, in addition to causing psychological distress and anxiety.

Case Report
A 5 year-old boy was brought to the Department of Paediatric Dentistry, Pacific Dental College and Hospital, Udaipur, by his very concerned parents,
with a complaint of pain and swelling in the child’s lower right jaw since 45 days. The pain was continuous and dull in nature, aggravated during mastication and temporarily relieved by medication. The parents reported that the facial swelling showed a gradual increase in size, and during the last 7 days, was associated with a rise in body temperature. The medical history elicited from the parents was non-contributory.

Prior to the visit to our paediatric dental facility, the child was examined by a general medical practitioner, then by a general dental practitioner and finally by a paediatrician, each of whom prescribed and subjected the child to a course of antibiotic therapy, with little effect. The last of these health care professionals further referred the child to our dental facility (Figure 1).

The swelling was diffuse and soft, extending from the right corner of the mouth to almost the posterior border of the mandible, involving the entire submandibular region of the right side and also crossing over to the left side (Figure 2).

Figure 1: The patient referral pathway

Figure 2: Frontal view of patient

No bony expansion of the body of the mandible was evident on palpation, but the right submandibular and the submental lymph nodes were observed to be enlarged, mobile and tender (Figure 3).

Figure 3: Left and right profiles of patient

Intraoral examination revealed poor oral hygiene and deep carious lesions in all lower primary molars with a sinus tract leading from the first primary molar of the left side (Figure 4). The molars in the area of concern, i.e., the right mandibular region exhibited a high degree of mobility, such that they mimicked ‘floating molars’. Obliteration of the vestibule was evident in the area of these teeth, together with marked gingival inflammation around the second molar.
Figure 4: Intraoral view showing deeply carious primary molars

An intraoral periapical radiograph revealed pulpal involvement of both the right mandibular primary molar teeth, with periapical infection resulting in loss of the inter-radicular bone in relation to the second molar. An orthopantamograph was made, the interpretation of which was non-contributory (Figure 5). Hence, routine endodontic therapy was instituted in the form of an emergency access opening and cleaning of the pulp canals without any more undue antibiotic therapy, taking into consideration the fact that the child had already undergone three courses of antibiotic therapy very recently.

Figure 5: Panoramic view of dentition

Surprisingly, no improvement in the child’s condition by way of reduction in the size of the swelling was observed on the day of the second appointment. A wait-and-watch approach was decided upon for a few days. In the meantime, the root canals were maintained clean. However, when the swelling did not show any signs of subsiding even after a week, a far more serious condition was suspected than was originally thought of. The possibility of an antibioma was ruled out here because the swelling was soft and diffuse rather than hard and localized. Also, routine blood investigations indicated a normal blood profile. Aspirate was obtained from the submental region where the swelling was most prominent and subjected to cytology to determine the existence of any infectious or malignant etiology. CT scan (Figure 6) showed the presence of multiple enlarged lymph nodes in the submental and submandibular region (Level-I), the high jugular nodes of the deep cervical chain (Level-II), the middle internal jugular nodes of the deep cervical chain (Level-III), lower deep cervical chain nodes (Level-IV) and the spinal accessory nodes and the transverse cervical chain nodes (Level-V) bilaterally. The results of the FNAC revealed the presence of lymphoid tissue with few foci of collections of epithelioid cells, caseative necrosis and occasional Langhan’s-type of giant cells, findings which are indicative of tubercular granulomatous lesions.

Figure 6: CT scan showing multiple, enlarged lymph nodes
After having arrived at a diagnosis of tuberculous lymphadenitis, the patient was successfully treated with a six-month regimen of anti-tuberculous medication under the supervision of a paediatrician.

Discussion

Tuberculosis of the lymphatic system is largely confined to the cervical lymph nodes, mostly because the tonsils and adenoids provide an easy portal of entry for inhaled mycobacteria. It could also result from lymphatic spread or haematogenous dissemination from an original focus in the lung. It could also comprise the lymph node component of a primary complex of the oral cavity where structures such as gums, tongue and buccal mucosa can be infected and subsequently healed without being detected.

The predominance of TB lymphadenitis in younger groups and in females has been well-documented by various authors. The reasons for this are not clearly understood; however, the underprivileged condition of women in rural Indian society may be a factor.

Cervical lymphadenitis remains a diagnostic and therapeutic challenge because it mimics other pathologic processes and yields inconsistent physical and laboratory findings. A high index of suspicion is needed for the diagnosis of mycobacterial cervical lymphadenitis. Atypical mycobacteria have also been incriminated in producing enlarged cervical lymph nodes. It is important to differentiate tuberculosis from non-tuberculous mycobacterium cervical lymphadenitis because their treatment protocols are different.

Diagnosis of extra-pulmonary tuberculosis is not so clear-cut because material for confirmatory test is not easily obtainable. Invasive procedures are not always acceptable to patients. Most cases of TB lymphadenitis are diagnosed on clinical grounds and/or histological appearance of biopsy tissue.

FNAC is a well-established diagnostic tool in the assessment of cervical masses. In developing countries like India, where tuberculous infection is common and other granulomatous infections are rare, presence of granulomatous features on FNAC are highly suggestive of tuberculosis.

Treatment for tuberculous lymphadenitis is essentially the same as for pulmonary tuberculosis, and short-course chemotherapy for childhood tuberculosis has been well-established.

In the present case, the medical histories of the patient and his family were non-contributory. Additionally, a confounding factor was present, i.e., a likely dental cause for the enlargement of the lymph nodes, which was highly misleading. However, the failure of antibiotic and dental therapy to bring about any improvement in the patient’s condition pointed out to a more serious problem. Here, the use of proper and appropriate investigative techniques, chiefly FNAC, paved the way to establishing an accurate diagnosis and successful treatment thereafter.

Conclusion:

Cervical lymph node enlargement is a common clinical problem in the paediatric population, reactive and granulomatous enlargement being two important causes. A high index of suspicion is required to diagnose this condition especially when associated with a dental infection. Primary diagnostic evaluation of childhood peripheral lymphadenopathy is mainly based on group of lymph nodes involved and FNA and when caused by mycobacteria, is best treated as a systemic disease with antituberculosis medication.
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