Midline neck swelling mimicking thyroglossal CYST: Report of an uncommon presentation of cysticercous infestatation

Tanuja Bundela[1], Prajwala Gupta[2], Minakshi Bhardwaj[2]

From [1]Senior Resident, [2]Professor, Department of Pathology, PGIMER & Dr. Ram Manohar Lohia Hospital, New Delhi, India.

Correspondence to: Dr. Tanuja Bundela, Department of Pathology, Room No. 310, OPD Block, PGIMER & Dr. RML Hospital, New Delhi - 110001, India. E-mail: tanuja.bundela@yahoo.in

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ABSTRACT

Cysticercosis in humans is caused by an infestation by larvae of *Taenia solium*. The neck is a rare site of the infestation. Here, we present the case of cysticercosis situated in the neck of a 12-years-old child. The midline neck swelling present in the child since 2 years mimicked thyroglossal cyst, both clinically and radiologically. There were no other systemic complaints. Fine Needle Aspiration Cytology (FNAC) of the swelling was done for reaching the final diagnosis. Hence, in all inflammatory/cystic lesions, particularly in endemic areas, the possibility of cysticercosis should be taken into consideration irrespective of age, location, and the size of the lesion.

Keywords: *Cysticercosis, Neck, Thyroglossal cyst.*

Cysticercosis is an infestation of the larva Cysticercus cellulosae, of *Taeniasolium*. Most of the developed countries have eradicated cysticercosis, but it is endemic in Asia, Africa, and Central and South America [1]. It is under-reported in India due to lack of systematic population-based studies but it is more prevalent in states of North India especially Bihar, Uttar Pradesh, and Punjab [2,3,4]. Cysticercosis commonly presents as a swelling in eyes, skeletal muscle, brain or spinal column and subcutaneous tissue. After infestation, Cysticercus cellulosae may involve various organs and when it involves the central nervous system, it leads to serious manifestation [5]. Cysticercosis is uncommon in neck region [6,7].

We report an uncommon case of Cysticercosis presenting as an isolated midline neck swelling and clinically mimicking as a thyroglossal cyst which was diagnosed on fine needle aspiration cytology (FNAC).

CASE REPORT

A 12-year-old male patient presented with a complaint of swelling in front of the neck since 2 years. There was no history of fever, weight loss or any other swelling elsewhere. On examination, there was no pallor, icterus, lymphadenopathy and pedal edema in the patient. The vitals of the patient were stable. The swelling was 1×1 cm, non-tender and tense cystic which was moving on deglutition (Fig. 1a). However, movement with protrusion of tongue was not clearly evident and the overlying skin was unremarkable. Clinically, a diagnosis of the thyroglossal cyst was considered.

Ultrasonography of the neck revealed thick-walled, cystic lesion of size 18×9 mm with internal debris in the anterior strap muscles. No definite vascularity was noted and bilateral thyroid, submandibular and parotid were normal. Computed Tomography (CT) scan was performed which showed a well-defined cystic lesion, 12×11×11 mm in size located in the infrahyoid region lying just above the thyroid (Fig. 1b). Based on the radiological investigations, a diagnosis of the thyroglossal cyst was given.

FNAC of the swelling was done and smears prepared showed dense acute and chronic inflammation in a necrotic background along with fragments of the parasitic bladder wall (Fig. 2a-b). Hence based on the FNAC, a final diagnosis of parasitic infestation with cysticercus larvae was given. The patient was given treatment with Albendazole 400mg once daily for twenty-eight days. On subsequent follow up of the patient after 1 month,the swelling subsidedand there were no local or systemic complaints.

DISCUSSION

Cysticercus cellulosae, the larval stage of *Taeniasolium* passes its life cycle in two hosts. Human acts as a definite host and harbors

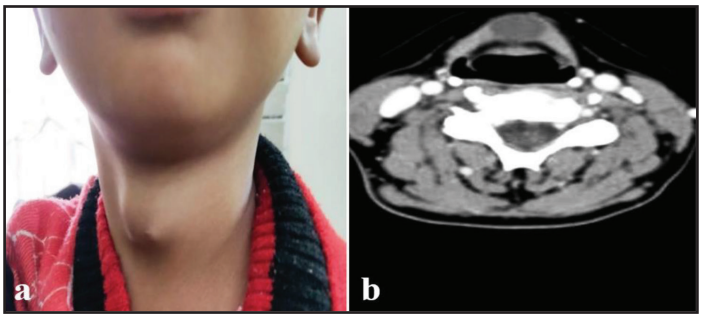

Figure1: (a) Midline neck cystic swelling; (b) Computed Tomography of the neck showing cystic lesion in the infrahyoid region.

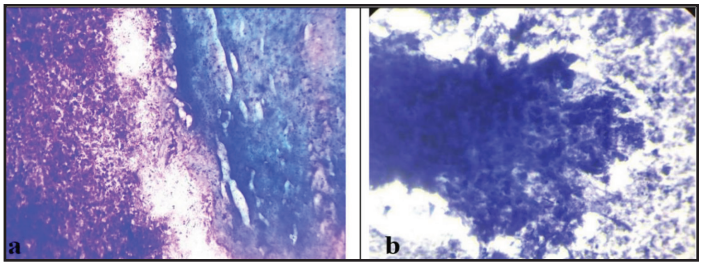

Figure 2: (a) Cytological smear shows fragment of parasitic wall with numerous small nuclei Cysticercous larva alongwith inflammation and necrosis (Giemsa- 400X); (b) Papanicolaou-400X

the adult worm while the pig is the intermediate host harboring the larval stage. Route of transmission is faeco-oral and human infection occurs due to ingestion of eggs. The human then acts as an intermediate host with the manifestation of cysticercosis in different sites in the body. Common sites of infestation are the brain, eye, skeletal muscle and subcutaneous tissues [7]. In the head and neck region, Cysticercosis commonly involves eyes, buccal mucosa, tongue, and lips.

Well-developed cysticerci are oval to elongated cyst containing fluid and invaginated scolex. The scolex has a rostellum with four suckers and 22–32 small hooklets. The cyst wall is 100-200µm thick and is multilayered. The outer, cuticular layer is smooth, hyalinized and is thrown in projections. Beneath the tegument, a row of tegumental cells is seen. The innermost layer, parenchyma is loose, reticular, having mesenchymal cells and calcerous corpuscles [1]. The corpuscles stain bluish purple color on hematoxylin and eosin (H and E) stain. Cutaneous nodules of Cysticerci are difficult to differentiate from benign mesenchymal tumors and lymphadenitis clinically.

The identification of larvae on FNAC helps in diagnosis of skin nodules. Aspirated fluid may be clear and strongly indicates parasitic infestation but significant cases may also yield purulent or hemorrhagic aspirate [8,9]. The presence of eosinophils, neutrophils, palisading histiocytes and giant cells in aspirate smears from subcutaneous nodule raises the suspicion of the parasitic lesion. Cysticercosis is diagnosed when fragments of larval cuticle and parenchyma are seen. Uncommonly, scolex in cytology smears can also be observed [1]. Viable cysticerci may cause no inflammatory response. However, on their degeneration, there is an infiltration of inflammatory cells, along with the foreign body giant cell reaction. Distinct cytomorphology is seen in the viable cyst, the necrotic and calcified lesions. Fragments of the bladder wall in a clear acellular background are seen in a viable cyst. FNAC smears from necrotic lesions may reveal fragments of the bladder wall, including calcareous corpuscles and detached single hooklets [1,8]. FNAC from hydatid cyst (*Echinococcus granulosus*) will also show many hooklets and scolices; however, their hooklets are dagger shaped [10,11]. Moreover, Calcified spherules and fragment of laminated membranes are seen in hydatid cyst. The differential diagnosis of Cysticercosis situated in the neck region can be thyroglossal cyst, lymphadenopathy, goitre or abscess.

Cysticercosis is treated with albendazole 400mg once daily administered orally for 4 weeks. In neurocysticercosis or ocular cysticercosis, steroids are administered orally to control inflammatory response due to the dying parasite.

CONCLUSION

Cysticercosis in the neck can be confused clinically for other common cystic swellings like thyroglossal cyst; especially in a child presenting with midline neck swelling. In all inflammatory/ cystic lesions, particularly in endemic areas, the possibility of cysticercosis should be taken into consideration irrespective of age, location, and the size of the lesion. FNAC proves to be valuable for early diagnosis in such unsuspected cases of cysticercosis.

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