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Chondroid Syringoma: A Skin Adnexal Neoplasm Diagnosed on Aspiration Smears

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Case Report
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Abstract

Chondroid syringomas are rare skin adnexal tumors which occur mostly in 20-80 year olds and commonly in the head and neck region with a male predilection. Here, we describe a 50-year old female patient presenting with subcutaneous swelling in the forehead. Fine needle aspiration revealed features of chondroid syringoma which was confirmed on subsequent histopathological examination. The present case highlights the importance of aspiration cytology for rapid, cheap and accurate diagnosis of these cutaneous neoplasms thus avoiding the necessity of invasive procedures.

Keywords: Chondroid syringoma; FNAC; Chondromyxoid Stroma

Abbreviations: FNAC: Fine Needle Aspiration Cytology; LG: Leishman-Giemsa; H&E: Hematoxylin-Eosin; CS: Chondroid Syringoma; MCS: Malignant Chondroid Syrinomas.

Introduction

Fine needle aspiration cytology (FNAC) has become the first line investigation of virtually any pathological swelling in the body. However, diagnosing skin adnexal tumors on cytology needs expertise due the wide variety of morphological overlaps. Chondroid syringoma, a rare skin adnexal tumor of eccrine/apocrine origin is one such tumor which can be diagnosed accurately on cytology [1]. The incidence of chondroid syringoma has been reported in the range of 0.01-0.098% [2]. These tumors occur commonly in head and neck region with size usually ranging from 0.5 cm to 3 cm [3] and should be in the clinical differential of cutaneous/subcutaneous swellings of this region. In spite of characteristic cytological features, there are only few case reports emphasizing the role of FNAC for diagnosing these benign tumors of the skin.

Case Report

A 50-year old woman presented to the outpatient department of Surgery with a 5 X 4 cm swelling over forehead just above the right eyebrow, gradually progressing over the last 2 years. On examination, the swelling was firm, non-tender and attached to the skin with a slightly bosselated surface (Figure 1). FNAC of the same was done with a 24G needle attached to a 10 cc syringe and on insertion into the swelling a gritty sensation was felt. The aspirate yielded a thick mucoid, gelatinous material which was then spread over the slides. Leishman-Giemsa (LG) and Hematoxylin-Eosin (H&E) stains were done on the air-dried and alcohol-fixed smears respectively. Microscopy of the H&E stained slides showed cellular smears composed of loose aggregates, sheets and discrete round to oval cells with moderate amount of cytoplasm, often enmeshed in eosinophilic extracellular material. The nuclei had finely stippled chromatin and occasional inconspicuous nucleoli (Figure 2A). The magenta colored chondromyxoid material was prominent on the LG stained slides (Figure 2B). Based on the clinical and morphological findings, a cytological diagnosis of chondroid syringoma was rendered. The tumor was excised with wide margins and sent to the histopathology lab. The sections revealed the skin covered, well-circumscribed tumor composed of varying proportions of epithelial/myoepithelial and mesenchymal components. The cuboidal cells were arranged in sheets, cords, tubules and glands admixed with the characteristic chondromyxoid stroma (Figure 3A & 3B). Foci of cartilage formation were also

noted thus explaining the gritty sensation during aspiration. Thus, the histopathological features were consistent with the diagnosis of chondroid syringoma as rendered on cytological smears. The patient was healthy and with no recurrence at 6-month follow up.

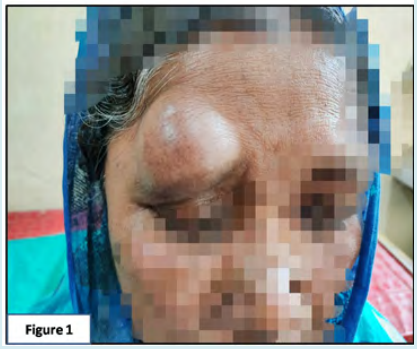

Figure 1: Photograph showing the firm, bosselated swelling over the right eyebrow.

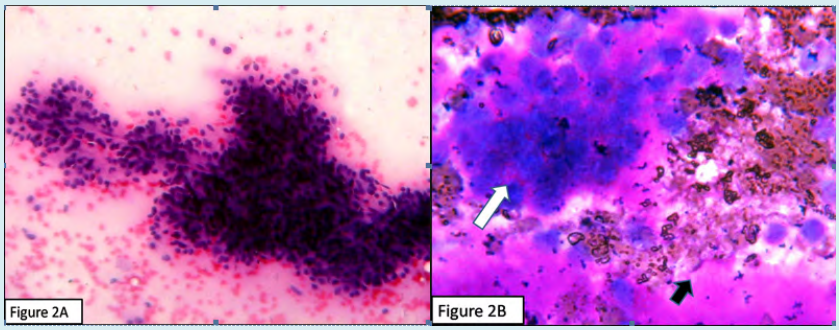

Figure 2A: Uniform round to oval, bland looking cells in tight clusters, trabeculae and singles with chondromyxoid material. (H&E; X100magnification).
Figure 2B: Fibrillary chondromyxoid material (black arrow) with entangled myoepithelial cells (white arrow) (LG stain; X 400 magnification).

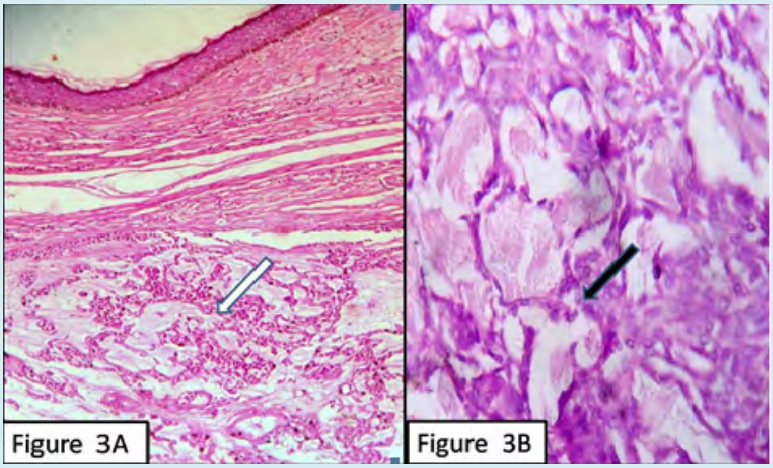

Figure 3A: Skin lined well circumscribed, unencapsulated tumor in dermis and subcutaneous tissue composed of tubuloalveolar and ductal structures with chondromyxoid matrix (white arrow) (H&E; X100 magnification).
Figure 3B: High power showing branching tubulocystic structures (black arrow) (H&E; X400 magnification).

Discussion

The term chondroid syringoma (CS) was introduced by Hirsh and Helwig in 1961 due to the presence of the cartilaginous matrix (chondroid) and sweat gland elements (syringoma) [4,5]. The name is now widely accepted and has replaced the older term "mixed tumor of the skin". They are usually of less than 3 cm but large lesions have also been described [5-7]. The common sites are in the head and neck region but they are also described in trunk, extremities, axillary and scrotal areas [8-11]. Headington recognized two types of CS, apocrine and eccrine [12]. The apocrine type is characterized by irregularly branching tubules lined by at least two cell-thick epithelium (cuboidal and flattened) with cyst formation (tubulocystic pattern) [5,13]. The eccrine type is characterized by rather evenly spaced, more-or-less uniform, small, round tubules lined by single layer cuboidal epithelial cells within a myxoidchondroid matrix [5,13]. In histopathological sections, follicular, lipomatous and sebaceous differentiation, clear cell changes, cartilage or osteoid formation and calcification have also been described [5,14,15]. These components may also be sampled on aspiration smears and add to confusion in diagnosis. However, in most of the cases, FNAC is rather helpful to rule out the various probable differentials that may present as a soft tissue swelling in head and neck region. The common clinical differentials include dermoid cyst, dermatofibroma, neurofibroma and pilomatricoma. The pultaceous aspirate from dermoid cysts usually contain anucleate squames and mature squamous cells while neurofibroma shows paucicellular smears consisting of tapering, spindle cells with nuclear buckling lying in a fibrillary material. Dermatofibromas also are less cellular with mostly spindle cells while pilomatricomas show mixture of basaloid cells and ghost cells with occasional foreign body giant cells. The characteristic cytology of chondroid syringoma thus causes minimal problem in most of the cases.

Malignancy in chondroid syringoma is rare and may arise de novo or following malignant transformation of benign cases. Large size>3 cm [5] and satellite nodules increase the likelihood of malignancy. Morphological features like markedly cellular smears composed of dyscohesive, pleomorphic cells in a necrohemorhagic background [16] should arouse the suspicion of malignancy on cytology smears. However, infiltrative margins and involvement of deeper structures along with atypia, increased mitosis and necrosis are necessary to stamp the tumor as malignant [17] thus making excision biopsy the confirmatory diagnostic test for malignant chondroid syrinomas (MCS). In case of MCS, other differentials like metastatic carcinoma, extraskeletal chondrosarcoma and chordoma are also to be considered depending on the site of the lesion [18]. However, the present case showed no evidence of nuclear pleomorphism, high nucleus: cytoplasmic ratio, atypical mitosis or necrosis which can mimic a metastatic carcinoma or malignant chondroid syringoma. Immunohistochemical stains like CK, EMA, CEA stain the epithelial cells while S-100, Calponin, GFAP, p63 and α-SMA stain the myoepithelial cells in cytology smears as well [18-20]. However, there is no stain that can differentiate malignant from benign chondroid syringomas on cytology smears. There are few case reports highlighting the advantage of aspiration cytology in a rapid diagnosis of chondroid syringomas [8,10,11,13,19,21] giant chondroid syringomas [5,7] as well as malignant chondroid syringomas [16,18] by various authors although histopathological examination of excised tumors remained the gold standard for diagnosis in all the cases.

In conclusion, FNAC is a fair enough accurate diagnostic modality to clinch the diagnosis of chondroid syringomas in most of the cases due to its characteristic morphological features. Being a cheap and rapid procedure, it bypasses the necessity of invasive biopsy for diagnosis thus ruling out the other differentials of cutaneous/subcutaneous swellings in head and neck region. However, large lesions, satellite lesions and atypical morphology should arouse the possibility of malignancy.

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