Fine Needle Aspiration Cytology Of A Subcutaneous Granular Cell Tumor Running Title: Cytology Of Granular Call Tumor

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Abstract

Granular cell tumor (GCT) is a relatively uncommon soft tissue tumor with only few reports of fine needle aspiration cytology diagnosis of subcutaneous or soft tissue granular cell tumor[1,2,3]. A 21-year-old female presented with a subcutaneous nodule on her left thigh on medial aspect of two year duration. The fine needle aspiration cytology smears showed clusters of large oval to polygonal cells with an abundant amount of granular cytoplasm. Many single, scattered cells with similar morphology were seen in the background. The tumor was diagnosed as a benign granular cell tumor.The histopathology of the excised lesion confirmed the fine needle aspiration cytology diagnosis. Hence, to conclude, the cytopathologic features of granular cell tumor are characteristic enough to enable a correct diagnosis even in an unusual site such as a subcutanceous nodule in the thigh region.

Keywords: *fine needle aspiration cytology, granular cell tumor, thigh.*

Case Report

A 21-year-old female presented with a subcutaneous nodule on her left thigh on medial aspect of two year duration. There was no history of trauma or tuberculosis. The nodule gradually increased in size to 1x1 centimetre. It was firm, non-tender, non-mobile and clinically appearing like a lymphnode. Aspirate was blood mixed scant material. The FNAC smears showed moderate cellularity with syncytial clusters of oval to polygonal cells with round central nucleus and abundant amount of finely granular cytoplasm, both on Papanicolaou (PAP) and May-Grunwald-Geimsa (MGG) stains. Some clusters also showed lymphocytic infiltration. Many single, scattered cells with similar morphology were seen in the background. Occasional cells showed small but conspicuous nucleoli and few intranuclear inclusions. No cross striations or lipid droplets were noted. There was no evidence of necrosis, nuclear atypia or mitotic activity. The tumor was diagnosed as a benign granular cell tumor and excisional biopsy was advised. A grayish-white, firm, nodular tissue mass of 1 centimeter in diameter was received. On histopathology, apart from the usual features of GCT, many lymphoid aggregates were noted surrounding the tumor as noticed on FNAC smears. The tumor was PAS positive and diastase resistant which confirmed the diagnosis of GCT.

Discussion

Granular cell tumor (GCT) first described by Abrikossoff in 1926 is a neoplasm of unknown histogenesis, although neural origin is postulated[1,2]. GCT may arise from almost any organ including the subcutaneous tissue of the extremities. Granular cell tumor (GCT) is a rare benign tumor accounting for 0.019 to 0.03% of all tumors[4]. GCTs are usually asymptomatic and may present as smooth, slowgrowing, solitary nodule in subcutaneous region. The mean age of occurrence ranges between 40 to 60 years. Females are twice more commonly affected[4,5]. In our case, young female patient of 21 years presented with a subcutaneous nodular swelling at a site of medial aspect of left thigh since two years.

FNAC smears reported in literature are moderate to highly cellular and composed of fairly uniform large cells with small round nuclei and abundant, indistinct finely granular cytoplasm[1,3]. They can be in clusters or single. Background can also show fine granular material. Occasionally intranuclear cytoplasmic inclusions have been identified[3]. All these features were observed in our case with lymphocytic infiltrate in few of the clusters. GCTs can occur with in small lymphoid aggregates or even small lymphnodes; which is a possibility in our case[5]. It should not be mistaken for metastatic tumors. Features like necrosis, spinding, vesicular nuclei with large

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nucleoli, increased mitotic activity, high nuclear-cytoplasmic ratio, nuclear pleomorphism and vascular invasion difine malignancy.3,5 These were not observed in this case. Considering the anatomic site, in the differential diagnosis, epidermal squamous cells aspirated during FNAC was considered. However squamous cells have distinct polygonal cell borders with dense waxy cytoplasm which was not seen in this case.1 Also upon evaluation of the cells at a higher magnification, cytoplasmic granularity was quite apparent, thus excluding the possibility of squamous cells. They were also distinguished from macrophathology, the other differential of rhabdomyoma, hibernoma and fobroxanthoma were also ruled out due to presence of granular cells.5

Thus, cytopathologic features of granular cell tumor presenting as subcutaneous nodule are distinctive enough to allow a correct diagnosis at an unusual site like thigh at a younger age. This diagnosis is important to make as it has a distinctive morphology with good prognosis and only excision and only excision is required.

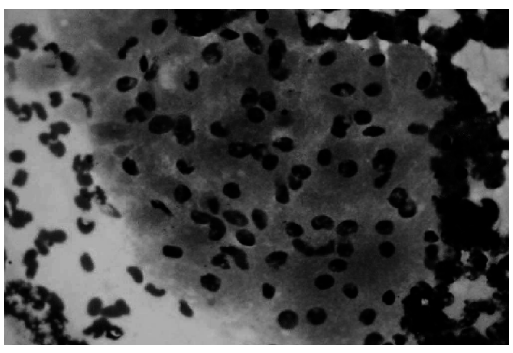

Figure 1: FNAC smear shows syncytial clusters of oval to polygonal cells with round central nucleus and abundant amount of finely granular cytoplasm.

Figure 2: Some clusters also showed lymphocytic infiltration at the edges of the clusters. (Papanicolaou, x 100)

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