ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 7, Issue, 01, pp.12036-12038, January, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE STUDY

CYTODIAGNOSIS OF GLOMUS TUMOR- A CASE REPORT

***Dr. Dharmendra Kumar and Gunja Dwivedi**

C/O Mahesh Goshwami, 50, Main Road, Panchvati Circle, Udaipur, Rajasthan Pin – 313001, India

ARTICLE INFO

Article History:
Received 09th October, 2014
Received in revised form
16th November, 2014
Accepted 20th December, 2014
Published online 31st January, 2015

Key words:
Fine needle aspiration cytology,
Glomus tumor.

ABSTRACT

Glomus tumors are uncommon and are rarely diagnosed on cytopathology. We report a case of 28 years female presenting with a painful subungual swelling. Fine needle aspiration sample was heavily admixed with blood and cytology showed groups of cohesive, uniform, small, round to oval cells with scanty cytoplasm against the background of red blood cells. Cytology was reported as "suggestive of glomus tumor". Histopathological examination confirmed the diagnosis. Careful cytomorphological examination supported by appropriate clinical history should suggest the diagnosis of glomus tumor and help in preoperative diagnosis.

INTRODUCTION

Glomus tumor is a distinctive neoplasm, the cells of which resemble the modified smooth muscle cells of the normal glomus body. The normal glomus body is a specialized form of arteriovenous anastomosis that serves in thermal regulation. It is located in the stratum reticularis of the dermis and is most frequently encountered in the subungual region, the lateral areas of the digits and the palm. The tumors are uncommon. We present a case of a 28 years female with a glomus tumor in the subungual region diagnosed by cytology.

Case History

A 28 years female presented with a gradually enlarging, painful swelling in the subungual region of the right middle finger, about 1 cm in diameter. Radiographs demonstrated a soft tissue lesion with no bony involvement. Fine needle aspiration cytology of the swelling was performed. Smears exhibited groups of cohesive, uniform, small, round to oval cells with scanty cytoplasm, indistinct cell borders and round nucleus with homogeneous chromatin against the background of red blood cells. Cytology was reported as "suggestive of glomus tumor" (Figure 1).

It was confirmed by histopathologically, showing vascular channels lined by endothelial cells, interspersed by uniformly round to ovoid glomus cells forming nests and sheets (Figure 2).

****Corresponding author: Dr. Dharmendra Kumar Garg,***
C/O Mahesh Goshwami, 50, Panchvati Circle, Udaipur, Rajasthan Pin – 313001, India.

DISCUSSION

Glomus tumour is considered to be a hamartoma developing from the neuromyoarterial glomus body, which is a highly specialised arteriovenous anastomosis responsible for thermoregulation. The glomus body consists of an afferent arteriole, a tortuous arteriovenous anastomosis, a system of collecting veins and a neurovascular reticulum that regulates the flow of blood through the anastomosis. Glomus bodies are present in the reticular dermis throughout the body, but are highly concentrated in the digits, palms and soles.

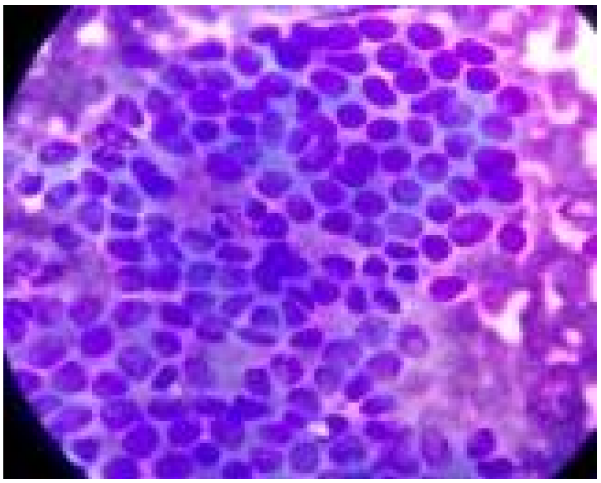

Fig. 1. Round to oval cells with homogenous granular chromatin, scanty cytoplasm and indistinct cell borders against the background of red blood cells (MGG, x1000)

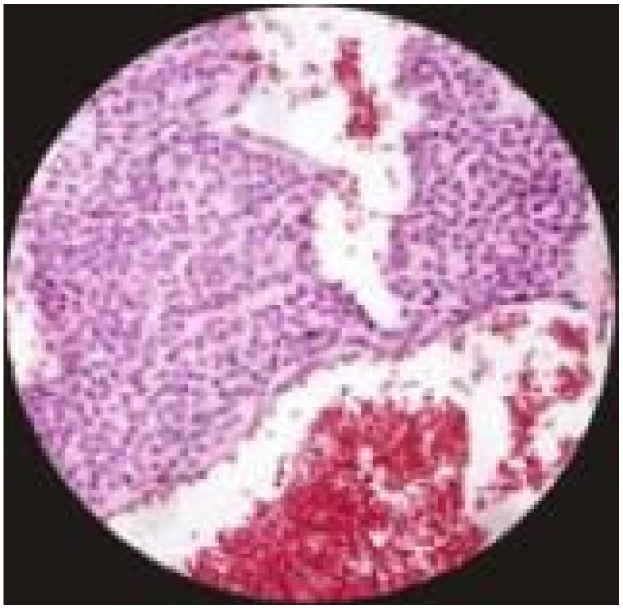

Fig. 2. Vascular channels lined by endothelial cells, interspersed by uniformly round to ovoid glomus cells forming nests and sheets (H and E, x400)

Reflecting a similar distribution, glomus tumours may affect any area of the body, but up to 75% occur in the hand and approximately 65% of these are in the fingertips, particularly in the subungual space (Grover *et al.,* 2013). Glomus tumors are rare mesenchymal neoplastic lesions arising from glomus bodies, mostly benign tumors, and malignant variants have been rarely reported (Abu-Zaid *et al.,* 2013). Diagnosis is often delayed because of the absence of specific symptoms and confirmation can only be made by histological study. Treatment is always surgical (Abbassi *et al.,* 2012).

The first cytological description of glomus was given by Holck and Bredesen (1996) in an axillary mass misdiagnosed as ectopic breast tissue. Glomus tumors cause little diagnostic difficulty at histopathology, especially if the clinical presentation is typical. However, glomus tumor can also occur in the gastrointestinal tract, solid organs (liver, kidney) and the extremities (Matevossian *et al.,* 2008). There is a recent report of a glomus tumor in the trachea presented by Norder *et al*. in 2012. Two examples of glomus tumors of the cervix that were incidental findings in patients with uterine leiomyomas are described by Albores-Saavendra *et al.* in 1999. Cytomorphological characterization of a classical case of glomus tumor can help in cytological diagnosis at uncommon sites. Cytomorphologic features have been poorly defined. Reports have described cohesive clusters of uniform round cells with scanty cytoplasm, similar to the present case (Vinette-Leduce and Yazdi, 2001; Gu *et al.,* 2002; Debol *et al.,* 2003). Debol *et al.* (2003) have described a background with vascular channels and Vinette-Leduc and Yazdi (2001) have found a background of blood, bare nuclei and occasional inflammatory cells.

One of the difficulties at aspiration could be a hemorrhagic aspirate. Paucicellularity was reported by some authors (Gu *et al.,* 2002; Debol *et al.,* 2003). The authors suggest needling of the tumor without aspiration.

The differential diagnoses are many. Eccrine spiradenoma may present a difficult diagnostic problem. However, the localization of glomus cells around blood vessels and lack of acini formations are helpful features. Smears of eccrine spiradenoma show the presence of bland uniform cells in cohesive clusters and cribriform sheets with rosette-like structures surrounding the amorphous material. Cytologic distinction rests on identifying three types of cells – larger epithelial cells, myoepithellial cells and smaller lymphocytes. Glomus tumors have to be differentiated from other vascular lesions, such as hemangiopericytoma, paraganglioma and lobular hemangioma, depending on the site of origin of the tumor. In hemangiopericytoma, cellular smears show knobby clusters of oval to spindle-shaped cells with ill-defined, finely granular cytoplasm and bland nuclei, but the number of mitotic figures varies. In paragangliomas, cells may show moderate nuclear pleomorphism with fine red granules in the cytoplasm. Lobular capillary hemangioma show clusters of oval to spindle-shaped cells along with a cellular infiltrate of neutrophils and mononuclear cells. Because glomus tumor is derived from pericytes with special modification toward glomus cells, it is closely related to myopericytoma and myofibroma (Mukherjee *et al.,* 2010).

Conclusion

Glomus tumor most of the time consists of rounded cells with scanty cytoplasm and crossing blood vessels. Occasionally the glomus tumor with spindle cell morphology might exhibit overlapping cytologic features. For accurate diagnoses and rule out from other differential diagnosis, proper clinical history and careful examination of cytological features, as round cells with scanty cytoplasm, indistinct borders, characteristic chromatin, and presence of few vessels, should be helpful. Thus the fine needle aspiration cytology is helpful in diagnosing of glomus tumor.

REFERENCES

Abbassi, A., Amrani, A., Dendane, M.A., El Alami, Z., El Madhi, T. and Gourinda, H. 2012. Glomus tumor of the finger pulp: an unusual pediatric case. *J. Mal. Vasc.,* 37(4):219-21.

Abu-Zaid, A. Azzam, A. Amin, T. Mohammed, S. 2013. Malignant glomus tumor (glomangiosarcoma) of intestinal ileum: a rare case report. Case. Rep. Pathol. Epub.

Albores-Saavedra, J. and Gilcrease, M. 1999. Glomus tumor of the uterine cervix. *Int. J. Gynecol-Pathol.,*18(1):69-72.

Debol, SM. Stanley, MW. Mallery, S. Sawinski, E. and Bardales, RH. 2003.Glomus tumor of the stomach: cytologic diagnosis by endoscopic ultrasound-guided fine-needle aspiration. *Diagn. Cytopathol.,*28:316-21.

Grover, C. Khurana, A. Jain, R. and Rathi, V. 2013 . Surgical Excision of Subungual Glomus Tumour. *J. Cutan. Aesthet. Surg.,* 6(4): 196–203.

Gu, M. Nguyen, PT. Cao, S. and Lin, F. 2002. Diagnosis of gastric glomus tumor by endoscopic ultrasound-guided fine needle aspiration biopsy. A case report with cytologic, histologic, and immunohistochemical studies. *Acta. Cytol.,*46:560-6.

Holck, S. and Bredesen, JL.1996. Solid glomus tumor presenting as an axillary mass: report of a case with morphologic study, including cytologic characteristics. *Acta. Cytol.,* 40:555-62.

Matevossian, E. Brücher, B LDM. Nährig, J. Feubner, H. and Hüser, N.2008. Glomus tumor of the stomach simulating a gastrointestinal stromal tumor: a case report and review of literature. *Case. Rep. Gastroenterol.,* 2:1-5.

Mukherjee, S. Bandyopadhyay, G. Saha, S. and Choudhuri, M. 2010. Cytodiagnosis of glomus tumor. *J. Cytol.,* 27(3): 10.

Norder, E. Kynyk, J. Schmitt, AC. Gauhar, U. and Islam, S. 2012. Glomus tumor of the trachea. *J. Bronchology. Interv. Pulmonol.,* 19(3):220-3.

Vinette-Leduc, D. and Yazdi, HM. 2001.Fine-needle aspiration biopsy of a glomus tumor of the stomach. *Diagn. Cytopathol.,* 24:340-2.

****