

Extradigital Glomus Tumor on the Abdomen: A Rare Case Report

Sabina Sitaula¹, Samir Majagaiyan², Ashok Bastola³, Saroj Sitaula⁴

¹ Department of Dermatology, Rapti Academy of Health Sciences, Ghorahi, Dang, Nepal

² Department of Pathology, BP Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal

³ Department of Ophthalmology, Lumbini Provincial Hospital, Butwal, Rupandehi, Nepal

⁴ Department of Radiology, NAMS, Bir Hospital, Kathmandu, Nepal

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Corresponding Author:

Sabina Sitaula

Department of Dermatology,
Rapti Academy of Health Sciences,
Ghorahi, Dang, Nepal

Email:

sitaulasabinu@gmail.com

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Abstract

Glomus tumors are benign neoplasms of glomus bodies, which constitute 2% of soft tissue tumors of extremities and are most commonly located in the subungual region but can occur in any extradigital site, such as the trunk, abdomen, and viscera. Extradigital glomus tumors are frequently misdiagnosed due to their atypical location and presentation. Here, we report a case of a 48-year-old male with an extradigital glomus tumor on the abdomen who presented with chronic localized abdominal wall pain for eight months. Upon detailed examination, a tender brownish papule was identified, which was temperature insensitive; an atypical feature for a glomus tumor. An excisional biopsy was done with a differential diagnosis of glomus tumor, leiomyoma, and skin adnexal tumor. Histopathological examination confirmed glomus tumor. Following excision, the patient was pain-free. This case emphasizes the importance of considering glomus tumors in the differential of unexplained abdominal wall pain, particularly when common causes have been ruled out.

Keywords: abdominal wall, extradigital tumor, glomus tumor, pain abdomen

Introduction

Glomus tumors comprise 2 % of all soft tissue tumors of extremities and are benign neoplasms that resemble the Sucquet-Hoyer canal of the normal glomus body, located just beneath the subpapillary vessels, that is responsible for the regulation of temperature and blood pressure.^{1,2} The most common site for glomus tumor is beneath the nail plate. However, it can occur in any extradigital location, such as arms, legs, trunk, head and neck and viscera.^{3,4} It typically presents in middle age female as an acquired, painful, cold-sensitive, reddish-blue, firm lesion. However, extradigital tumor is more prevalent in men.^{2,5} Extradigital glomus tumor is usually diagnosed late not only because of its atypical location but also due

to lack of tumor-associated cold sensitivity in some of the lesions.¹ We reviewed the literature and found that glomus tumor was rarely reported in the abdominal skin, thus, it is likely to be misdiagnosed or underdiagnosed. Here, we report a case of extradigital glomus tumor of the abdomen. This case can enhance our understanding of the rare location of glomus tumors to decrease misdiagnosis and missed diagnosis.

Case Description

A 48-year-old male presented to the dermatology outpatient department (OPD) of Rapti Academy of Health Science with a severely painful localized area on the abdominal skin, on the right side of umbilicus, for eight

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months. Even the slightest contact with clothing caused severe pain; however, a cold shower didn't aggravate the pain. He had no history of trauma, surgery, or any significant medical and family history. He visited multiple centers for this complaint and underwent evaluation for abdominal pain, including ultrasonography abdomen and pelvis, but no cause was identified. Later, ultrasonography of the site revealed hypoechoic lesion and was misdiagnosed as an infected cyst. Then he was treated with oral antibiotics for 2 weeks without improvement. He continued to have severe pain but actual cause wasn't identified. Hence, he visited dermatology OPD at our hospital.

On close up examination of abdominal skin, a single, severely tender, brownish papule was found on the right side of the umbilicus, with no local temperature change, erythema, or discharge (figure 1). Based on history and examination finding differential diagnoses of glomus tumor, leiomyoma, and skin adnexal tumor was made.⁶ Under local anesthesia, elliptical incision was made, and total excision of the papule was done, and whole tissue was sent for histopathological examination. Histopathology revealed a well-circumscribed dermal tumor with round to oval glomus cells, sharply punched-out nuclei, and amphophilic cytoplasm (figure 2a, 2b).

Depending on clinical and pathological findings, a diagnosis

of extradigital glomus tumor was made. At 3-week follow-up, the excision site had healed completely, sutures were removed, and the patient was pain free. Informed written consent was obtained from the patient for publication of this case report.



Figure 1: Showing severely tender brownish colored barely visible papule on right side of abdomen in 48 years male

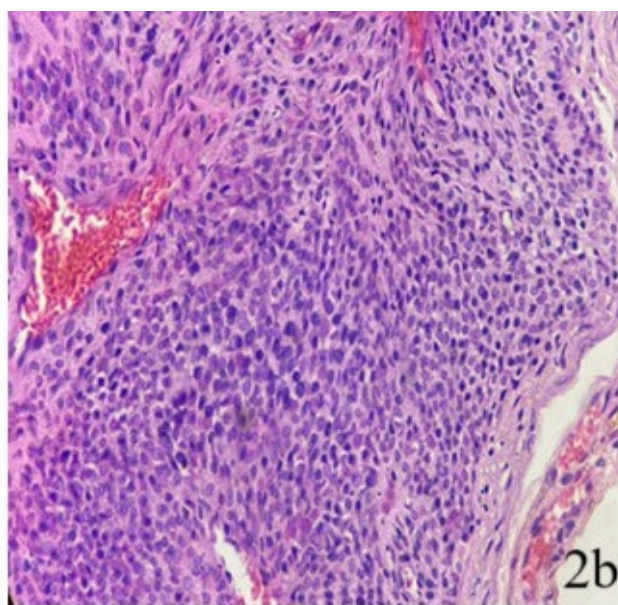
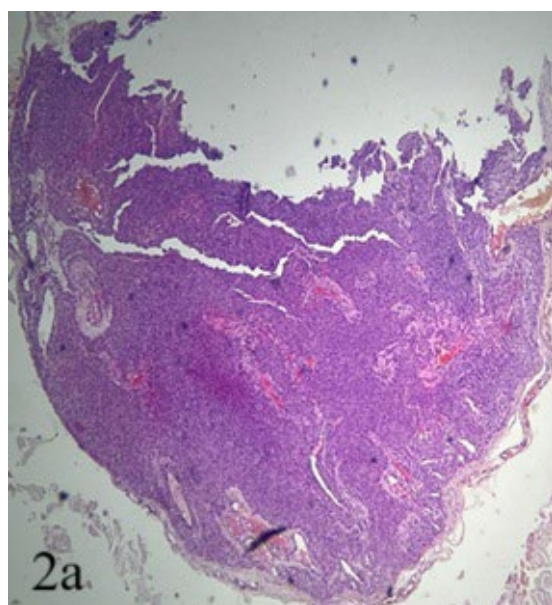


Figure 2: (10X, 40X magnification) Histopathological finding

2a. Scanning view showed the tumor comprised sheets and nest of uniform and round cells (white arrow), interrupted by vessels of varying size (black arrow). 2b. High-power examination revealed that the glomus tumor cells exhibited punched-out and hyperchromatic nuclei (black arrow) and amphophilic cytoplasm (white arrow).

Discussion

Glomus body is contractile neuro-myoarterial structure in the reticular dermis, and glomus tumors are rare benign hamartomatous smooth muscle neoplasms of it. Glomus cells surround the arterial end (known as the Sucquet-Hoyer canal) of the glomus body. The glomus body, a

specific type of arteriovenous anastomosis, can alter cutaneous blood flow, and influences both blood pressure regulation and thermoregulation.^{1,3} It is most widely distributed in the fingertips; hence, digital glomus tumors are most common. Subungual glomus tumors are most commonly found in middle-aged women; however, in other anatomical locations, the sex differences of tumor is less.⁵ Extradigital glomus tumors can occur anywhere, including upper and lower extremities, head and neck, trunk and abdomen, and internal viscera.^{5,7} However, cutaneous glomus tumors occurring in the abdominal skin are exceedingly rare, which makes this case an unusual presentation. Folpe et al. reported 52 atypical glomus tumors, out of which only 7 were of trunk and abdomen whereas other site involved were extremities, buttock, lung, stomach, and L3 vertebra.⁸ The diagnostic triad of spontaneous pain, cold hypersensitivity, and pin point tenderness out of proportion to tumor size is most common presentation of glomus tumor, but the classic triad may be absent in atypical locations. Similar to our case, Kim et al. reported a case of glomus tumor causing chronic abdominal pain, lacking diagnostic triad but also lacking discoloration.^{3,4} Dar et al. reported a case of glomus tumor causing chronic abdominal wall pain with all 3 classic features.⁹ Histopathological examination of suspected lesion is required for accurate diagnosis, though plain radiography, USG, and MRI help to locate and determine exact size of tumor. Histopathologic features are characterized by uniform, round glomus cell surrounding thin-walled blood vessels. Immunohistochemical (IHC) staining typically shows positivity for smooth muscle actin (SMA) and vimentin while being negative for S-100.^{3,5} Accurate diagnosis followed by complete excision is usually curative for patients with solitary lesions with rare recurrence.^{5,10}

Our case presented to us with localized abdominal wall pain after various medical and surgical consultations and investigations, which were focused on disorders of abdominal viscera. Many patients with extradigital tumors are often misdiagnosed due to unusual tumor locations and clinical differences. It is crucial to consider glomus tumors in the differential diagnosis of patients presenting with painful or asymptomatic purplish, bluish, or brownish papules or subcutaneous nodules in extradigital sites in order to avoid misdiagnosis or delay in treatment.

However, this case report describes a single patient and the findings lack generalizability. High resolution imaging and IHC studies were not performed, and short-term follow-up period limits assessment of recurrence.

Conclusion

Extradigital glomus tumors are rare and can present atypically, usually lacking the classic features seen in digital cases. We report a case of painful, temperature-

insensitive minute brownish papule over abdominal skin which was diagnosed as an extradigital glomus tumor after biopsy. This case emphasizes including glomus tumors in the differential diagnosis of chronic abdominal wall pain, particularly when other common causes have been excluded. By reporting this case, we raise awareness of these tumors to facilitate a quicker diagnosis and prevent unnecessary expenditures or consultations, treatment delays, and persistent pain.

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