Glomus tumour

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ABSTRACT

Glomus tumours are rare tumours accounting for only 1–5% of soft tissue tumours of the hand. They are described classically in the subungual region. We present the case of a 32-year-old woman with a late diagnosis of a glomus tumour that had caused her excruciating pain. Clinical examination was positive for Hildreth's sign and the Love test. Magnetic resonance imaging delineated the tumour, which was excised and confirmed histologically. This case highlights the continued delay in diagnosis of glomus tumours as well as the use of imaging in diagnosis and planning of surgery.

KEYWORDS

Glomus tumour – Subungual – Hildreth's

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Glomus tumours are rare tumours that account for 1–5% of all soft tissue tumours of the hand. They can occur anywhere but appear to have a propensity for the upper limb and have been classically described in the subungual region.¹ They appear commonly in women between the ages of 20 and 40 years.²

These tumours remain notoriously difficult to diagnose, with extreme pain suffered by patients for long periods of time before symptom resolution. We present a case history with a prolonged delay in diagnosis.

Case history

A 32-year-old woman presented with a 6-year history of a painful right middle finger following a crush injury when it was caught in a door. The pain started a year following the trauma and had become progressively worse to the point that it was excruciatingly tender to touch. Cold sensitivity was not experienced. The patient had visited five specialists and undergone plain radiography but a diagnosis was never made. She was otherwise fit and well.

On examination, the patient's finger nails were stained with henna (a plant-based dye) but a reddish discolouration was present subungually, close to the eponychium, on the right middle finger, with an associated 5mm swelling present on palpation in the eponychium. The nail plate was not deformed. The lesion was positive for Hildreth's sign and the Love test. At this stage, a glomus tumour was suspected and further imaging was required to delineate the lesion.

Plain radiography findings were unremarkable. Magnetic resonance imaging (MRI), however, showed a well defined, sharply marginated, hyperintense area in the soft

tissue on T2 weighted imaging and short tau inversion recovery (STIR) sequence imaging.

Under a brachial block, the skin over the eponychium was lifted, revealing a bluish lesion (7mm x 3mm) that had ruptured through the nail bed. The nail bed was incised and the lesion excised. Scalloping of the distal phalanx was present but there was no clinical evidence of invasion (Figs 1 and 2).

Histology confirmed the lesion to be a glomus tumour. Following surgery, the patient experienced complete resolution of symptoms. She was followed up for two months with no recurrence of symptoms and no deformity of the finger.

Discussion

First described by Wood in 1812,³ a glomus body comprises an afferent arteriole, an anastomotic Sucquet–Hoyer canal, an efferent venule, the intraglomerular reticulum and its capsule. The Sucquet–Hoyer canals are lined by endothelial cells, which are surrounded by smooth muscle cells. Interspersed in the smooth muscle are the large cuboid glomus cells. Their primary function is thought to be thermoregulation.⁴

Glomus bodies are therefore composed of three main structures: glomus cells, the vasculature and smooth muscle cells. Hyperplasia of any of these structures will result in a glomus tumour. As a result, they can be classified as a solid glomus tumour (75%), a glomangioma (20%) or a glomangiomyoma (5%).⁵ Other variants of the glomus tumour are glomangiomas and malignant glomus tumours, which are exceedingly rare.

Figure 1 Glomus tumour seen in nail bed as a bluish lesion

Glomus tumours can occur either as multiple lesions or in isolation. Familial tumours are often inherited in an autosomal dominant manner.⁶ Following a study of 32 cases, Carroll and Berman described a classical triad of symptoms that they felt were pathognomonic: 'spontaneous lancinating pain, extreme pain with the gentlest of touch, and intolerance to changes in temperature'.⁴

Clinical tests such as the Love test (point tenderness) and Hildreth's sign (decreased pain on exsanguination of the limb and applying a tourniquet) have shown to be highly suggestive of glomus tumours, with Hildreth's sign having a sensitivity of 92%.⁷ In our case, touch sensitivity and pain were the primary symptoms. The patient had not experienced cold sensitivity but this may have been because the average temperature in Oman is 28°C with highs of 49°C and lows of 18°C.

Plain radiography is occasionally helpful as it may show scalloping of the bone surface. Computed tomography may show abnormalities or erosions of the distal phalanx. MRI findings of a hyperintense lesion on T2 weighted and STIR sequence imaging further characterises the vascular appearance of the glomus tumour. Other imaging modalities that may be useful include angiography and colour Doppler ultrasonography. Nevertheless, all of the above tests may be negative, as demonstrated in a case report in 2005, in which the authors concluded that exploration of a painful finger should be considered if a glomus tumour is suspected even if the MRI findings are negative.^{1,6,8}

Surgical excision remains the standard treatment for glomus tumours, with clear margins indicating adequacy of treatment. However, if malignant features are suggested on histology, a wider excision is required as well as close follow-up review to assess for metastases.⁵

Figure 2 Glomus tumour excised with scalloping of distal phalanx

Conclusions

Glomus tumours are ubiquitous in the body. They continue to frequently escape diagnosis with patients visiting a number of specialists and undergoing numerous investigations before a diagnosis is made. A high index of suspicion is required to diagnose glomus tumours to reduce morbidity but also to reduce its malignant potential.

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