CASE REPORT

Glomus tumour: a rare differential for subungual lesions

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SUMMARY

A 21-year-old, usually fit and well man, presented with a 10-year history of intermittent, paroxysmal pain and temperature sensitivity to his right thumb. He felt this was associated with a subungual lesion present on the same digit. He was diagnosed as having a glomus tumour and was referred to the hand surgeons for surgical excision.

BACKGROUND

This case highlights a rare and interesting differential for a subungual lesion, namely that of a glomus tumour. We decided to write this case report to raise awareness of the condition, as the mean length of time from initial symptoms until diagnosis is around 7 years, and can be up to 15 years, if diagnosed at all.^{1 2} During this time, patients can undergo significant discomfort. Accurate epidemiological information on glomus tumours is missing from the literature due to a presumably high misdiagnosis rate. A better understanding of these lesions could therefore improve our knowledge of both the disease process and its prevalence. In approximately 1% of cases, the lesion is malignant, and so limiting time to diagnosis is crucial.³

CASE PRESENTATION

A 21-year-old, usually fit and well man, presented to the general practitioner with a 10-year history of intermittent, paroxysmal right thumb pain. He stated that the thumb frequently felt cold, and having carried out significant research on the internet, questioned whether he had Raynaud's, or a glomus tumour. On this occasion, he presented following a 3-day exacerbation of what he described as 'severe throbbing pain'. This had interfered with his sleep and was associated with the darkening of a lesion beneath the nail. He denied any precipitating injury to the thumb or nail.

His only other medical history of note was mild eczema for which he took no prescribed or over the counter medications. He did not smoke. He had a family history of breast cancer.

On examination, the right thumbnail and cuticle were unremarkable. The patient had a 3×3 mm well-circumscribed, uniform purple-red discolouration under the nail (figure 1). There was exquisite pain on palpation over the subungual lesion, but little or no pain when palpating the cuticle and soft tissue of the thumb.

The patient was initially referred under the 2-week-wait criteria to the dermatologists for further assessment of possible subungual acral

lentiginous melanoma. On assessment, it was suggested that a glomus tumour was the most likely diagnosis, and he was referred on to the hand surgeons.

DIFFERENTIAL DIAGNOSIS

Glomus tumour—the patient suggested the diagnosis after doing his research online. He had the triad of exquisite point-tenderness, severe paroxysmal pain and cold sensitivity in his right thumb.

Melanoma—the acute occurrence of a clearly delineated, pigmented, subungual lesion in the absence of trauma initially provoked a 2-week-wait referral, for fear of a developing acral lentiginous melanoma.

Trauma—subungual haematomas are a common occurrence, and can be a challenge to investigate short of removing the nail. In this instance, the patient denied trauma, the lesion looked clearly delineated and was a colour inconsistent with a haematoma.

TREATMENT

The patient was referred on to the hand surgical team where he underwent excision.

OUTCOME AND FOLLOW-UP

The patient was referred to the hand surgical team where he underwent surgical excision of the glomus tumour.

DISCUSSION

Glomus tumours are rare benign hamartomatous smooth muscle neoplasms of the glomus body.⁴ The glomus body is a myoneural-encapsulated arteriovenous shunt found within the dermis that is responsible for temperature regulation. Glomus bodies are found in great numbers in the fingers

Figure 1 Image of the patient's thumb, with the 3×3 mm well-circumscribed, uniform purple-red discolouration highlighted.

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and toes, and this distribution offers a plausible explanation for the over-riding propensity for the tumours to occur in the distal aspects of the digits.² Glomus tumours can occur throughout the body, even in somewhat unexpected sites such as within thoracic and abdominal viscera. However, these cases account for the minutiae of an already rare presentation.³ Sixty-five per cent of the lesions occur in the tips of the digits, with almost all of the remainder occurring in the hands, palms, wrists, forearms or feet. Overall, glomus tumours account for between 1% and 5% of hand tumours.²

Glomus tumours are usually solitary lesions of less than 1 cm in diameter. Multiple glomus tumours are rare, accounting for an estimated 10% of presentations. These tend to develop earlier in life, often before the age of 20. Approximately 70% of the tumours occur by the age of 30, although there is a well-documented mean delay in diagnosis of around 7 years, due to the rarity, benignity, small size and lack of common knowledge about the condition.^{1–3}

There have been a number of clinical tests proposed to aid with diagnosis. A commonly documented test is the Love test, where a pinpoint instrument can be used to provoke exquisite pain over the lesion, with an absence of pain in the unaffected bordering regions. This has a sensitivity of 100%, but a very low specificity. Another example is the Hildreth test, the mechanism of which is thought to come about by interrupting the blood supply to the vascular lesion. The clinician applies a tourniquet to the associated limb and inflates this to approximately 250 mm Hg. In a positive test, there should be a reduction in pain over the lesion when the tourniquet is inflated, with a rebound sudden onset of pain in the lesion when the tourniquet valve is released. Hildreth's test is estimated to have a sensitivity of 92% and a specificity of 91%, making it a valuable tool in the diagnosis of glomus tumours.⁴

Approximately 1% of glomus tumours are malignant. In addition, there is reported to be up to a 10% recurrence rate, thought to be due to incomplete excision.³ The ability to provide a complete excision can get complicated if undertaking an initial diagnostic punch biopsy, as the glomus tumour can occasionally have poorly defined margins leaving residual tumour to regrow, facilitating the requirement for further surgery.^{5 6}

Owing to the associated comorbidity of recurrence, along with the small risk of malignancy development, it is essential

that preoperative imaging be undertaken to maximise the chances of complete surgical excision and to minimise post-operative complications. This can be in the form of ultrasonography or MRI. Glomus tumours, similarly to all highly vascular tumours, show up dark on a T1-weighted scan and bright on a T2-weighted scan. Further demarcation can be achieved with the use of gadolinium contrast.⁶

Learning points

- ▶ A glomus tumour is a very rare, often benign neoplasm of the glomus body, which is the apparatus of the dermis responsible for temperature regulation.
- ▶ In the vast majority of cases, the glomus tumour will be located in the digits, hands or feet.
- ▶ In exceedingly rare cases, the glomus tumour can be malignant, and can manifest anywhere within the body.
- ▶ A glomus tumour should be suspected if a patient presents with the triad of exquisite point-tenderness, severe paroxysmal pain and cold sensitivity, particularly in the tips of the digits.

Contributors MJN undertook the clerking and initial assessment/referral. MJN, GP and PA shared research, writing and proof reading.

Competing interests None declared.

Patient consent Obtained.

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