CASE REPORT

Lipoma of the sinus tarsi

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SUMMARY

Lipoma is rarely found in the foot. It is usually asymptomatic although sometimes can present with pain. We report a case of lipoma of the sinus tarsi presenting with functional instability.

BACKGROUND

Lipoma is a common benign soft tissue tumour which is composed of fat cells. It is usually asymptomatic although sometimes present with pain. Lipomas can occur almost anywhere in the body where the adipose tissue is present. However, they can be rarely found in the foot with many of them present as a sole mass. A case of lipoma of the sinus tarsi was reported which was present with functional instability of the foot.

CASE PRESENTATION

A 35-year-old woman noticed a painless lump over her right lateral heel for several years. The lump progressive increased in size and she noticed subjective sense of instability and giving way of her right foot for 1 year although no repeated ankle sprain was experienced. Clinical examination showed a 5 cm well-demarcated lump over the left sinus tarsi (figure 1). Transillumination test was apparently positive. The anterior drawer test of the ankle was negative. The clinical diagnosis was a sinus tarsi ganglion.

Video 1 Excessive subtalar motion was demonstrated after excision of the lump.

TREATMENT

Open resection was performed. Intraoperatively, it was found to be a lipoma extended into the sinus tarsi. It was in proximity with the lateral capsule-ligamentous structure of the posterior subtalar joint. After resection of the mass, the anterior and posterior subtalar joints were exposed and excessive subtalar motion was demonstrated (video 1). Plication of the lateral capsule-ligamentous structure with augmentation with the inferior extensor retinaculum was performed. Postoperatively, a short leg cast was applied for 6 weeks. Histological examination confirmed the diagnosis of lipoma without any synovial lining (figure 2).

Figure 1 (A and B) Clinical photos showing the sinus tarsi lump (arrow).

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Figure 2 (A) Intraoperative photos showing the lipoma. (B) The lipoma was retracted and the anterior subtalar joint was exposed. (C) Histological picture of the lipoma.

OUTCOME AND FOLLOW-UP

The sense of instability was subsided after the operation. On 75 months of follow-up, there was no local recurrence of the lump or sense of instability. Stress films showed similar degrees of the lateral joint opening up of bilateral posterior subtalar joints (figure 3).

DISCUSSION

The sinus tarsi is a conical-shaped cavity located between the anterior talocalcaneonavicular and posterior talocalcaneal joints. The contents of the sinus tarsi include the interosseous talocalcaneal ligament, cervical ligament, anterior portion of the subtalar joint capsule and synovium, posterior portion of the

Figure 3 Fluoroscopy showing similar degree of lateral joint opening up of bilateral posterior subtalar joints on inversion stress.

talocalcaneonavicular joint capsule and synovium, medial, inferior and lateral roots of the inferior extensor retinaculum and artery of the tarsal canal.¹ The lipoma of this case was believed to be arising from the fatty tissue of the sinus tarsi. Differential diagnosis includes intra-articular synovial lipoma² and lipoma arborescens.^{3 4} Both of them are very rare. Lipoma arborescens arises when the subsynovial connective tissue is replaced in large measure by mature fat cells, giving rise to a frondose mass with villous projections.⁵ Clinically, the disorder typically presents as chronic painless swelling of the joint caused by recurrent effusions. Rarely a soft, well defined or poorly defined mass can be felt on palpation.⁵ Although the lesion had proximity with the anterior and posterior subtalar joints, it was believed to be an extra-articular lesion because the histology of the mass did not show any synovial tissue.

The intimate relationship between the lesion and the ligamentous structures of the sinus tarsi may explain the functional instability experienced by the patient. In order to have complete resection of the lesion, some of the ligamentous structures of the sinus tarsi were resected together with the mass. This resulted in mechanical instability of the subtalar joint that requiring stabilisation procedure and cast protection. The lack of preoperative imaging study is a major shortcoming of the management of this case. A preoperative MRI was not performed because it was misdiagnosed to be a ganglion cyst. Preoperative MR study is worthwhile to study the nature of the lesion and its relationship with the structures of the sinus tarsi. This allows better planning of the surgery and evaluates the possibility of arthroscopic assisted resection of the lesion in order to preserve the ligamentous structure and alleviate the need of ligamentous reconstruction.

Learning points

- Lipoma should be considered to be one of the differential diagnoses of sinus tarsi tumour.
- Solid tumour of the sinus tarsi can cause sense of instability of the subtalar joint.
- Preoperative MR is recommended to investigate the nature of the tumour.

Contributors THL was responsible for initial idea, and preparation of the manuscript. KYF was responsible for collection of the data.

Competing interests None.

Patient consent Obtained.

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