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A 56-year-old female presented to the Orthopaedic clinic with pain on the medial aspect of both feet and ankles, aggravated by walking. Clinical examination of both feet showed swellings along the medial aspect of the ankles and feet with tenderness. She had severe planovalgus (flat) feet and was unable to stand tiptoed.

What is diagnosis?

What is the clinical sign (better appreciated on the right side)?

Answer: refer to page 155

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(Refer to page 144)

Answer: Posterior tibial tendon insufficiency (PTTI)

Posterior tibial tendon insufficiency (PTTI) is a condition characterised by flatfoot deformity (pes planus), which results from reduced stability and support of the arch of foot, causing its collapse.¹ This is due to inflammation or tearing of the posterior tibial tendon, which inserts to the navicular tuberosity, cuneiforms, metatarsal bones and sustentaculum tali.^{1,2} It is the commonest cause of acquired pes planus in adults, affecting mostly the female gender in their 60s.²

PTTI may develop after acute injuries, overuse of the tendon, and tendon degeneration.^{1,2} Risk factors include increasing age, the use of corticosteroid, seronegative inflammatory arthropathies, and comorbidities especially obesity, diabetes mellitus and hypertension.²

Early symptoms of PTTI tend to be pain along the medial side of the foot and ankle, exacerbated with activity, causing limitations in walking.¹ Later on, patient may develop lateral ankle pain due to subfibular impingement caused by shifting of the heel bone into valgus position.^{1,2} The main sign of PTTI is pes planus, and in a more severe case, patient may present with the classic "too many toes" sign (**Panel**). There is abduction of the forefoot with more than forty percent of talonavicular uncoverage, such that up to lateral fourth toe can be seen on inspection from posterior aspect.² Normally, only the fifth toe and half of the fourth toes



Panel: 'too many toes' sign (arrow).

can be seen.¹

Investigations in a patient with PTTI include plain radiography (Anterior posterior and lateral views of the weight-bearing foot could help detect arthritis and determine severity of the condition by providing detailed view of the bony structures), and ultrasound or MRI scan for visualisation of changes in the posterior tibial tendon and its sheath.^{1,2}

Initial non-operative management of PTTI includes symptomatic relief with ice and non-steroidal anti-inflammatory drugs (NSAIDs), immobilisation using a walking cast for six to eight weeks to alleviate tenosynovitis, using custom-moulded in-shoe orthosis to raise the foot arch temporarily, and using an ankle brace for patients with rigid forefoot abduction and hindfoot valgus.^{1,2} Patients who fail to respond to conservative treatment may be candidate for surgery, which may range from tenosynovectomy, tendon transfer to calcaneal osteotomy.²

REFERENCES

- 1:** Kadakia AR. Posterior tibial tendon dysfunction. Available from <http://orthoinfo.aaos.org/topic.cfm?topic=a00166> (accessed 6th July 2016).
- 2:** Allen D. Posterior Tibial Tendon Insufficiency (PTTI). <http://www.orthobullets.com/foot-and-ankle/7020/posterior-tibial-tendon-insufficiency-ptti> (accessed 6th July 2016).