Diabetes mellitus, Monckeberg’s sclerosis and cardiovascular disease

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DESCRIPTION

A 56-year-old man, known case of diabetes mellitus type 2 presented with history of twisting of left ankle for 1 day. Clinical examination revealed mild swelling and redness at ankle joint with no external wound. His blood pressure was 124/80 mm Hg and ankle brachial pressure index (ABPI) was 1.4 (normal 0.8–1.3). Bilateral dorsal pedis were not palpable, all other peripheral pulses were palpable with good volume. On cardiac examination, heart rate was 68 beats per minute with no abnormal heart sound. He underwent X-ray foot which showed calcified posterior tibial artery and dorsal pedis artery (Railroad track pattern calcification) (figure 1). Colour doppler of lower limbs showed multiple calcified and non-calcified plaques causing mild stenosis. Peak systolic velocity (PSV) was low (15 cm/s) with the presence of biphasic waveform and spectral broadening in bilateral posterior tibial arteries. Bilateral dorsal pedis arteries also showed multiple calcified plaques with reduced luminal diameter. PSV was low (8 cm/s) with altered monophasic waveform with presence of tarsus parus pattern. His haemoglobin was 14.5 g/L, WBC 10 000 /µL, serum creatinine 0.9 mg/L, serum calcium 9.8 mg/L (normal 8.5–11 mg/L), phosphorous 4.2 mg/L (normal 2.5–4.5 mg/L), triglyceride 354 mg/L and LDL 141 mg/L. His parathyroid hormone and vitamin D levels were 40 pg/mL (normal 10–55 pg/mL) and 35 ng/mL (normal >30 ng/mL), respectively. His HbA1C was 7.8% and 2D-echo revealed normal left ventricular ejection fraction with concentric hypertrophy. Patient was diagnosed with soft tissue injury left ankle along with incidentally detected Monckeberg’s sclerosis. He was started on atorvastatin 40 mg/day, aspirin 75 mg/day along with oral hypoglycemic drugs, and referred to cardiologist for further evaluation of cardiovascular disease.

Monckeberg’s sclerosis is a type of dystrophic calcification which is characterised by degeneration of elastic fibres, followed by the deposition of hydroxyapatite crystals in the medial layer of blood vessel. This entity was first described by Johann Georg Monckeberg in 1903 and is commonly seen in patients with diabetes mellitus and end-stage renal disease. It mainly affects the small and medium-sized blood vessels of extremities like femoral, popliteal and radial artery, but can also occur in visceral blood vessels. Since it does not affect the intima, previously it was considered as insignificant bystander to peripheral arterial atherosclerosis. But, now evidence showed that it is an independent risk factor for cardiovascular disease, systolic hypertension along with peripheral artery disease. Monckeberg’s sclerosis interferes with the successful revascularisation in patients with peripheral artery disease. There is no definite

Patient’s perspective

I have type 2 diabetes mellitus for 7 years and came to emergency with trauma to my left ankle. The treating team examined thoroughly and they diagnosed me with Monckeberg’s sclerosis. They counselled me about this disease and the risk associated with it. On their suggestion, I went for cardiology evaluation and was diagnosed with cardiovascular disease. I am now on medication and regular follow from my cardiologist. Thanks to the treating team.

Learning points

► Monckeberg’s sclerosis is a type of dystrophic calcification that affects the small and medium sized blood vessels of extremities.
► Commonly seen in patients with diabetes mellitus and end-stage renal disease.
► It is an independent risk for cardiovascular disease so patients with Monckeberg’s sclerosis should be evaluated for the same.
therapy for Monckeberg’s sclerosis. Patient detected with this entity should be evaluated for cardiovascular disease.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

**REFERENCES**


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