A 18-year-old girl presented with multiple painless large subcutaneous swelling on the gluteal-sacral (Fig. 1A) and elbow region (Fig. 1B). She also had swelling over the metatarsal joints of the foot (Fig. 1C) and interphalangeal joints of the fingers (Fig. 1D) since childhood. There was no family history of similar illness, premature coronary events, or death. Because of the cosmetic disfigurement, she had multiple excisions of gluteal xanthomas. Her total cholesterol was 921 mg/dL (optimal below 200 mg/dL), low-density lipoprotein cholesterol (LDLc) 755 mg/dL (optimal below 100 mg/dL), high-density lipoprotein cholesterol (HDL) 125 mg/dL (optimal >60 mg/dL), and very low-density cholesterol 40.5 mg/dL (optimal below 30 mg/dL). The calculated total cholesterol and LDL ratio was 7.3 (normally <3.3). A clinical diagnosis of familial hypercholesterolemia (FH) was made based on the Simon Broome criteria.

Xanthomas are subcutaneous and tendinous cholesterol deposition within macrophages of the extracellular matrix inside the tendons or the skin. They have a predilection for elbows, knees, tendons, joints, hands, feet, and buttocks. FH is a common genetic cause of premature cardiovascular disease (CVD) and is due to a defect in the LDL receptor (LDLR) or low uptake of LDL by the liver. Homozygous FH results in markedly high total cholesterol levels, 3–6-fold higher than normal, usually with >600 mg/dL. The estimated risk of premature CVD is 20-fold higher in FH as compared to that of the general population. There are significant gaps in knowledge regarding the life course of FH and the benefits of existing therapy including proprotein convertase subtilisin/kexin 9 (PCSK9) inhibitors. PCSK9 inhibitors block the LDLR recycling by clathrin-mediated endocytosis and subsequently lysosomal degradation of LDL-receptors. Alirocumab and evolocumab (subcutaneous injection administered every 2 and 4 weeks, respectively) are the two most common PCSK9 inhibitors commonly used recently. In refractory cases, plasma exchange and lipoprotein apheresis have been tried.

The FH is an under-recognized and rare entity in India, appropriate clinical diagnosis is required to avoid inadvertent surgery, which had happened in the present case. Our patient was treated with 80 mg of atorvastatin and 10 mg of ezetimibe. She followed up for a period of 6 months. Her xanthomatosis did not improve despite of 50% reduction in LDL cholesterol. Thereafter she was lost to follow-up.

References

Figs 1A to D: (A) Huge xanthomas in sacral area over both buttocks; (B) Elbow xanthomatosis; (C) Metatarsal xanthomas; (D) Interphalangeal xanthomas in hands