

# Radiographical appearance of osteitis fibrosa cystica in primary hyperparathyroidism before and after parathyroidectomy

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## DESCRIPTION

The case of a patient with primary hyperparathyroidism with classic and severe skeletal involvement has been previously reported.<sup>1</sup> Briefly, it was the case of a 63-year-old woman who presented with multiple repeated fractures, the latest of which were of both femoral shafts. Primary hyperparathyroidism was diagnosed based on elevated calcium with unsuppressed parathyroid hormone (PTH) levels. The excess PTH secretion was localised to a right inferior parathyroid adenoma. She eventually underwent parathyroidectomy with documented decline in calcium and PTH levels.

A preoperative skeletal survey radiograph was performed on November 2008, 3 months before parathyroidectomy. Among the findings was a lytic lesion of the fourth metacarpal of the right hand, compatible with osteitis fibrosa cystica. Repeat x-ray performed on April 2012 or 38 months after parathyroidectomy showed complete remineralisation of the previously noted lytic lesion. The area previously occupied by the osteitis fibrosa cystica now appears hyperdense indicative of bone formation (figure 1).

Her fractures have also healed and there has been no recurrence of any fracture since the surgery. She has also been ambulatory since then.

Areas of the bone affected by osteitis fibrosa cystica are known to resolve, with radiographs showing hyperdensities within 3 months of successful parathyroidectomy.<sup>2</sup> These radiographical changes are also accompanied by histological changes in bone, showing an osteoblastic or healing response.<sup>3</sup>

## Learning points

- ▶ Osteitis fibrosa cystica pertains to lytic lesions of the bone that appear as cysts. These are due to excessive bone resorption seen in primary hyperparathyroidism.
- ▶ Osteitis fibrosa cystica resolves after parathyroidectomy, with radiographs showing complete remineralisation and bone formation.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

November 2008  
3 months before intervention



April 2012  
38 months after intervention



**Figure 1** On a radiograph prior to parathyroidectomy (the intervention), a lytic lesion was seen on the fourth metacarpal of the right hand (yellow arrow), compatible with osteitis fibrosa cystica. On follow-up performed 38 months after parathyroidectomy, there was now a hyperdensity occupying the same area indicating complete remineralisation of the lytic lesion (blue arrow).

## REFERENCES

- 1 Sandoval MAS, Paz-Pacheco E. Primary hyperparathyroidism with classic and severe skeletal involvement. *BMJ Case Rep* 2010. doi:10.1136/bcr.04.2010.2929
- 2 Agarwal G, Mishra SK, Kar DK, *et al*. Recovery pattern of patients with osteitis fibrosa cystic in primary hyperparathyroidism after successful parathyroidectomy. *Surgery* 2002;132:1075–83; discussion 1083–5.
- 3 Chavda DV, Frock JT, Zielinski CM, *et al*. Reversal of histology of bone after parathyroidectomy in patients with hyperparathyroidism. *J South Orthop Assoc* 1998;71: 65–71.

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