

## CASE REPORT

# Leuprorelin acetate granulomas: recurrent subcutaneous nodules mimicking metastatic deposits at injection sites

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### Case report

An 84-year-old man presented with two subcutaneous nodules in his abdominal wall where he was receiving leuprorelin acetate injections to treat his prostatic adenocarcinoma. The nodules were painless, firm, irregular, tethered to the overlying skin and each 2.5 cm in diameter. No skin changes were apparent. On biopsy, the histology showed nodules of florid granulomatous inflammation within the subcutaneous tissue in association with fat necrosis (Fig. 1). There was no evidence of tumour. The findings were thus reported as being consistent with injection-site granulomas. At the 3-month follow-up there were recurrent nodules in the patient's abdominal wall.

### Comment

While secondary deposits from prostatic carcinoma are rare in the abdominal wall, these nodules caused the patient a great deal of anxiety. Documented adverse reactions of leuprorelin acetate include hot flushes, pain, loss of libido and flare at the injection site [1], but not

injection-site granulomas, which have been associated so far with insulin and aluminium-containing tetanus toxoid vaccines [2]. We think this is a novel adverse effect of leuprorelin acetate injection in humans not previously reported. Interestingly, granuloma formation has been associated with LHRH implants contained in ethyl vinyl acetate polymer in experiments where the implants were placed in the peritoneum of catfish [3]. LHRH analogues are coupled to lactic acid polymers to allow depot injection. The formation of granulomas could be related to such polymers in leuprorelin. There is no definite treatment or preventative measure for this problem, apart from changing to another preparation. Similarly, it is not possible to predict the development of this complication. More research is needed into this aspect of leuprorelin preparation, to avoid patient and medical anxiety.

### References

- 1 Sarosdy MF, Schellhammer PF, Soloway MS *et al.* Endocrine effects, efficacy and tolerability of a 10.8 mg depot formulation of goserelin acetate administered every 13 weeks to patients with advanced prostate cancer. *BJU Int* 1999; **83**: 801–6
- 2 Fawcett HA, Smith NP. Injection-site granuloma due to aluminium. *Arch Dermatol* 1984; **120**: 1318–22
- 3 Goodwin AE, Grizzle JM. Granulomatous inflammation and monstrous giant cells in response to intraperitoneal hormone implants in channel catfish (*Ictalurus punctatus*). *J Comp Pathol* 1991; **104**: 147–60

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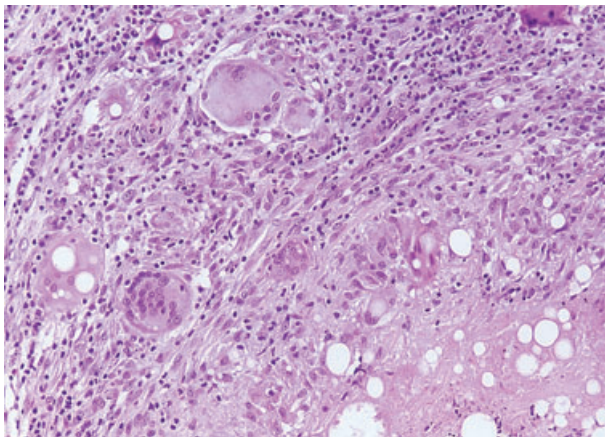


Fig. 1. Giant cells and fat necrosis associated with granulomatous changes. Haematoxylin and eosin  $\times 40$ .