Case Report

B-cell lymphoma arising around a PTFE graft

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Introduction

Polytetrafluoroethylene (PTFE) grafts are widely used to facilitate access for haemodialysis. They may present with complications including infection and thrombosis. However, localised lymphoma associated with a PTFE graft has not been previously described. Here we present the case of a patient with B-cell lymphoma arising around a PTFE graft.

Case

A 77-year-old Italian woman with end-stage renal failure of unknown origin had been on haemodialysis since 1995. Her past medical history included β-thalassaemia trait, erythropoietin (Epo)-resistant anaemia, asthma, depression, mixed aortic valve disease and a mastectomy for Paget’s disease of the right nipple.

Haemodialysis had been performed via a right thigh PTFE loop graft since 1996. The right leg became swollen in early 2001 and she was admitted twice that year with suspected vascular access thrombosis. In September, ultrasound scanning suggested organizing haematoma and by December the loop graft was occluded. Investigations revealed both an arterial anastomosis and a venous outflow stenosis, which were dilated radiologically. Low-dose TPA was infused with good effect.

Although the radiological procedure was successful with excellent flows reported, in April 2002 she was readmitted. The right leg was tender, swollen and inflamed and a mass was palpable. Haemodialysis via the graft had failed and there was no thrill. She had been started on oral antibiotics for presumed cellulitis at her local hospital.

Doppler USS showed a well-defined mass 5.8 x 11.1 cm in the right groin. There was no evidence of graft rupture. I.v. heparin was started. At operation, there was a substantial inflammatory reaction with marked oedema and induration around the graft: biopsies were taken. The blocked PTFE graft was partially removed with difficulty because of bleeding from multiple small vessels in the surrounding tissue. Post-operatively, the induration persisted and wound healing was slow (Figure 1). Histology showed a diffuse large B-cell lymphoma (Figures 2 and 3). A whole-body CT scan showed no evidence of disease elsewhere and it was staged 1A but she had a High-Intermediate Lymphoma Prognostic Index score.

She was treated with cyclophosphamide and vincristine and four cycles of rituximab. Corticosteroids and radiotherapy were avoided because of the difficulty with wound healing.

The right thigh wound healed completely after the initial chemotherapy. Chemotherapy was delayed by prolonged neutropenia after the fourth cycle. A CT scan at 4 months showed a persistent mass in the thigh (Figure 4) and a trucut biopsy showed fibrous scar tissue, a bone marrow was hypocellular and there was no evidence of lymphoma in either.

Discussion

PTFE grafts are widely used in haemodialysis for bridging arteries and veins when superficial veins are unsuitable or have been exhausted. Common complications of these grafts include infection, thrombosis, steal syndromes, pseudoaneurysm formation and arterial or venous anastomotic stenoses. In this patient, the possibility of lymphoma was not considered prior to surgery.

The lymphoma was monoclonal, IgMκ. There was no confusion with a reactive plasmacytosis. Lymphoma arising at sites of chronic inflammation has been described in association with chronic inflammation particularly where immunodeficiency, Helicobacter pylori or viruses such as Epstein–Barr virus (EBV) are also present [1–5]. Our patient was only immunodeficient by virtue of being a haemodialysis patient. The
lymphoma did not contain EBV and the patient was HIV negative. Interestingly, plastics, mineral oils and silicone can induce lymphomas in genetically susceptible mice [6] but there is no evidence of an increased incidence of lymphoma in haemodialysis patients regularly exposed to plastic tubing.

It is unclear whether the small remaining segment of graft should be removed, with the attendant risks of bleeding. Because access for haemodialysis is limited, there may be no option but a further PTFE graft at another site.

This is the first report of a localized lymphoma in association with a PTFE graft.

Supplementary data

Colour versions of Figures 1–3 are available at NDT Online.

Conflict of interest statement. None declared.

References


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