Perigraft Seroma After Open Abdominal Aortic Aneurysm Repair: Frequency, Risk Factors and Management

Objectives: Perigraft seroma (PGS) with aneurysm sac enlargement is an under-recognized complication after open abdominal aortoiliac aneurysm (AAA) repair with unknown clinical consequences. This study was undertaken to determine the frequency of PGS, identify associated risk factors, and review resulting complications and their management strategies.

Methods: All patients at our institution who underwent open AAA repair from 1995 to 2009 and had post-operative cross-sectional imaging of their abdomens were retrospectively reviewed. PGS was defined as a perigraft fluid collection present > 3 months post-operatively, ≥3 cm in diameter and ≤25 Hounsfield units on computed tomography (CT). Charts were reviewed for patient demographics, co-morbidities, operative variables and long-term outcome.

Results:
Of the 112 subjects identified, 13 had aortic reconstruction with Dacron grafts and 99 with polytetrafluoroethylene (PTFE) grafts. Twenty (17.8%) patients had PGS, all of whom had PTFE grafts (20/99, 20.2%). Mean age was 68.5 years and mean aneurysm diameter pre-op was 6.4 cm (range 4.0-10.9). The average time from AAA repair to PGS detection was 51 months. PGS averaged 6.0 cm in diameter (range 3.0-11.0). Multivariate analysis revealed that the following factors were associated with PGS development: diabetes (OR=3.5, p=0.013), smoking (OR=5.6, p=0.01), anticoagulation (OR=7.2, p=0.003), and bifurcated graft reconstruction (OR=8.0, p=0.001). Four (20%) patients required intervention for PGS-related complications - three for symptomatic PGS expansion/rupture and one for acute limb ischemia secondary to graft limb compression. Two patients had open exploration, sac evacuation/reduction, and partial graft replacement with Dacron - one for a ruptured aneurysm sac and one for persistent pain with sac enlargement. A third patient underwent CT-guided drainage for abdominal pain. The patient with acute limb ischemia was treated with catheter-directed thrombolysis and graft limb stenting.

Conclusions: PGS after open AAA repair occurs more frequently than previously reported. Complications requiring intervention can occur in up to 20% of patients. A variety of treatment
modalities can be used to treat complications. Earlier CT surveillance is advised after open AAA repair with a PTFE graft.