In our experiments the complete de-endothelialization was a very consistent finding after 1 h of unsupported perfusion. In fact this corresponds with the postmortem findings of Kockx et al. [1]. Dr Wilhelmi is right in his remarks concerning the CD34, however it is indeed not likely for the phenomena he suggests to play a role in the very short period of observation. However, we confirmed the presence of endothelium with electron microscopy. Furthermore, the presence of CD34 corresponds with the morphological areas of endothelial cell nuclei in the HE staining.

References


* Corresponding author. P.O. Box 95500, Amsterdam, 1090 HM, The Netherlands.
E-mail address: w.stooker@olvg.nl (W. Stooker).

PII: S 1010-7940(02)00438-2

Letter to the Editor

A foreign body reaction to Surgicel® mimicking an abscess following cardiac surgery

Mohamed F. Ibrahim a,*, Christopher Apb, Christopher P. Young a
aDivision of Cardiothoracic Surgery, Guy’s and St Thomas’s Hospital Trust, St Thomas’s Hospital, Lambeth Palace Road, London SE1 7EH, UK
bDivision of Cardiac Anaesthesia, Guy’s and St Thomas’s Hospital Trust, St Thomas’s Hospital, Lambeth Palace Road, London SE1 7EH, UK

Received 22 April 2002; accepted 23 May 2002

We read with interest the paper by Patané et al. [1] about complication due to excessive use of Surgicel. The authors report their case of excess Surgicel mimicking intramural haematoma of the ascending aorta.

We report a 53-year-old woman who was followed up for some years because of aortic regurgitation and dilated aortic root. She was referred for surgery when she started to develop symptoms of progressive exertional dyspnoea and chest pain. Trans-thoracic echocardiogram (TTE) on admission showed left ventricular end-diastolic dimension (LVEDD) of 6.5 cm and aortic root dimension of 5.0 cm. The cardiac catheter demonstrated severe aortic regurgitation (AR), a dilated aortic root and normal coronary arteries. She underwent aortic root replacement with a 30-mm haemoshield Dacron graft and resuspension of the aortic valve commissures. Intraoperative trans-esophageal echo (TEE) showed mild AR. She made an uneventful recovery and was discharged home on the seventh post-operative day. A follow-up TTE at 6 weeks showed mild aortic regurgitation and normal LVEDD at 5.2 cm. One year later she was referred back having developed grade 4 dyspnoea. TTE confirmed severe aortic regurgitation. She underwent redo aortic valve replacement (AVR) with a 21-mm Carbo-medics mechanical valve through the Dacron root replacement method. Intra-operatively, there were dense adhesions around the graft, and while dissecting the aortic graft from the main pulmonary artery whitish thick cheesy material with the appearance of pus came out from a pocket around the graft. Pieces of retained non-absorbed Surgicel were also recovered. What was thought to be pus was sent to Microbiology and Gram stain.

The patient was covered with intravenous antibiotics until culture demonstrated the pus to be sterile with no organisms seen or grown. Debridement of the pocket around the aortic graft was performed with completion of her AVR.

She had an uneventful recovery and was discharged home on the seventh post-operative day. Now 1 year after her redo AVR, she remains well.

Surgicel, a local haemostatic gauze consists of oxidized regenerated cellulose. It is a poly anion, the functional unit of which is termed polyanhydroglucuronic acid. The ability of tissues to absorb Surgicel and its inherent haemostatic properties makes Surgicel a valuable haemostatic agent to surgeons [2].

Being bio-absorbable, Surgicel is widely used in surgery to control bleeding and is often left in the surgical bed. The exact mechanism of haemostasis is poorly understood, but is believed to promote coagulation physically, rather than by altering the physiological clotting mechanism [3]. Surgicel seems to provide mesh for platelets to start adhesion and aggregation and subsequently coagulation takes place [4]. Absorption commences within 24 h, the rate depending on the amount of material used, the degree of local blood flow and the tissue bed itself. Within 1 week multinucleated giant cells are observed and in 4–8 weeks these have disappeared together with the Surgicel [5].

Ultrastructural examination revealed that the fibrous residue of Surgicel is phagocytosed by macrophages 48 h after implantation. Although not resulting in foreign body giant cell formation, the material did not appear to be processed with facility by the cell [6].

These observations may explain earlier reports of persistence of Surgicel at sites of implantation. Several reports previously described complications of Surgicel use in abdominal surgery [7] and neurosurgery [3,5] where Surgicel gave a picture of post-operative granuloma or an abscess.

Surgicel is still used in cardiac surgery, either to control bleeding from the sternum or laceration in the epicardium or
to adjust the shape and position of aorto-coronary bypass grafts.

Although Surgicel is a relatively non-irritant substance and is completely absorbed by the body in most instances it is, none the less, a foreign body and should be used in the smallest amounts possible. Also, physicians and radiologists should be familiar with the appearance of retained Surgicel in X-rays [7], sonograms [8] and computed tomography scans [9].

**References**

[7] Gelderen FV, Swinnen J. Appearance of oxidized cellulose (Surgicel): pitfall in the diagnosis of postoperative abscess or an intramural haematoma using X-rays, sonograms and computed tomography scans. For this the reason the Surgicel has to be used as little as possible. We recommend avoiding Surgicel between the aorta and pulmonary artery and also between the aorta and vena cava because in this position the formation of pseudoaneurysms and pseudoabscesses due to chronic inflammatory reaction is most common. In fact, in all cases, as reported in the literature, the problem related with Surgicel is the use in excess. Actually it is not possible to distinguish a Surgicel accumulation from a tumor or an intramural haematoma using X-rays, sonograms and computed tomography scans.

**Letter to the Editor**

**Clinical relevance of microembolic signals in patients with prosthetic heart valves**

D. Georgiadis*, A. Studer*, R.W. Baumgartner*, H.R. Zerkowski*

*Department of Neurology, University of Zürich, Frauenklinik Strasse 26, 8091 Zurich, Switzerland

**Department of Cardio-thoracic Surgery, University of Basel, Basel, Switzerland**

Received 7 February 2002; accepted 28 May 2002

We read the recent article of Kofidis et al., concerning the clinical relevance of high-intensity transient signals (HITS) in patients with aortic valve replacement with interest [1]. Still, we feel that a number of issues require clarification:

1. The authors use the term HITS throughout the paper, and even state that “the lack of correlation between the