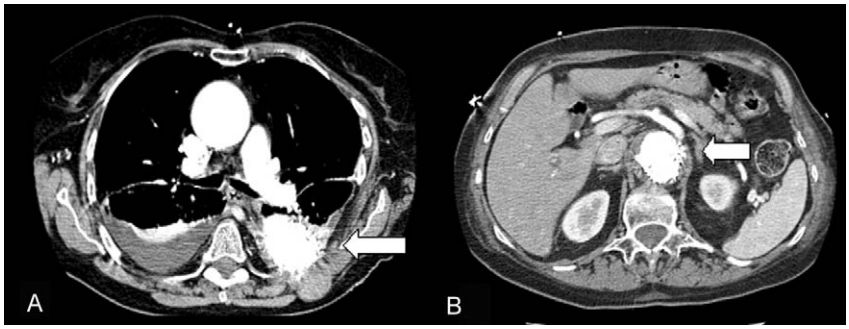

Fig 4. Postoperative computed tomographic scan reveals (A) successful thoracic aortic stent-graft exclusion of pseudoaneurysm, and (B) successful exclusion of true aneurysm at the level just proximal to the celiac axis.

20% mortality rate for a primary operation, and an approximate paraplegia rate of 5% [6, 7]. Reoperations of the descending thoracic aorta are rare and carry an increased risk of morbidity and mortality. Undoubtedly, the high morbidity and mortality from open surgical repair include the substantial comorbidities of this elderly population as well as the morbidity associated with an open surgical procedure that generally requires a large thoracotomy, cross clamping of the aorta, cardiopulmonary bypass, and prolonged mechanical ventilation [8–11]. Because of this high morbidity and mortality rate associated with open surgical repair, the technique of endovascular stent grafting has several potential benefits due to its minimally invasive approach. Generally a femoral arterial cut-down or retroperitoneal approach is necessary to allow access to the aorta for stent graft placement, and the procedure requires no aortic cross-clamp time, no thoracotomy, and no cardiopulmonary bypass. Considering the extensive experience of this institution and others, the use of thoracic aortic stents has proven safe and effective in a variety of aortic pathologies [3, 4, 12, 13].

We believe that this is the first reported case of the treatment of a psuedoaneurysm arising from a previously replaced descending aorta with an endovascular graft. Because the natural history of psuedoaneurysms is to increase in size and potentially rupture, repair is indicated. Although the use of endovascular stents in the treatment of aortic abdominal psuedoaneurysms arising from sites of a previous open repair has been reported, the use of the thoracic endoluminal graft for this purpose has not [14]. This case demonstrates that the use of endoluminal grafts in reoperative thoracic aortic pathologies can be accomplished with low morbidity and mortality.

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FEATURE ARTICLES

Management of Superior Vena Cava Syndrome by Internal Jugular to Femoral Vein Bypass

Rajinder Singh Dhaliwal, MS, MCh, Debasis Das, MS, MCh, Suvitesh Luthra, MS, MCh, Jaswinder Singh, MS, Sudhir Mehta, MS, and Harkant Singh, MS

Department of Cardiovascular and Thoracic Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, India

We report a 30-year-old man with superior vena cava syndrome due to fibrosis from a previously irradiated malignant thymoma. The patient presented 4 years after the

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Address correspondence to Dr Das, Department of Cardiovascular and Thoracic Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, PIN, 160012 India; e-mail: dasdeba@yahoo.com.

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initial treatment, after having been lost to follow-up. Investigations revealed total obstruction of the superior vena cava, and right subclavian and right internal jugular vein. The patient underwent an extra-anatomic bypass (ringed polytetrafluoroethylene graft 10-mm diameter) between the left internal jugular vein and the left femoral vein brought in a subcutaneous tunnel over the anterior chest and abdominal wall. Entry to the thoracic cavity was avoided due to extensive fibrotic changes visualized in the computed tomographic chest scan. Follow-up Doppler at 2 months, 6 months, 1 year, and 3 years showed a patent graft. An internal jugular vein to the femoral vein bypass is a simple method for palliation of superior vena cava syndrome.

(Ann Thorac Surg 2006;82:310–2)

Superior vena cava (SVC) syndrome is a disabling and potentially life-threatening condition resulting from a complication of neoplastic or inflammatory disease of the mediastinum. Bronchogenic carcinoma, metastatic pulmonary, or mediastinal malignancy is the most frequent cause of SVC syndrome. Several techniques for bypass of the SVC to relieve severe symptoms have been described; these techniques have used spiraled saphenous vein grafts [1, 2], femoral vein grafts [3], and polytetrafluoroethylene grafts [4] as conduits. The most common bypass done is made between the internal jugular vein and the right atrium. Endovascular treatment has emerged as a newer modality for treatment of SVC syndrome [5]. There are few reports of extra-anatomic subcutaneous bypass between the jugular vein and the femoral vein [6, 7].

A 30-year-old man presented with facial swelling, engorged neck veins, and dizziness for the prior 3 months. The patient had presented 4 years before with similar complaints and was diagnosed to have malignant thymoma that was unresectable. The patient received two cycles of radiotherapy and was lost to follow-up. Presently the patient had facial puffiness with engorged veins of the face, neck, and anterior chest wall. His remaining general physical and systemic examination was normal. A chest roentgenogram showed homogenous opacity in the right paratracheal and right hilar region. Computed tomographic scan showed fibrotic changes in the superior mediastinum with an ill-defined mass infiltrating into the SVC. A venogram of the SVC showed total obstruction of the SVC with right subclavian vein obstruction. A Doppler of the neck veins showed the right internal jugular vein to be thrombosed. Written informed consent was taken from the patient before the procedure. The patient was successfully palliated of his symptoms by an extra-anatomic bypass (ringed polytetrafluoroethylene graft 10-mm diameter) between the left internal jugular vein and the left femoral vein brought in a subcutaneous tunnel over the anterior chest and abdominal wall. The patient was anticoagulated with warfarin for 2 months, and then he was prescribed low-dose aspirin therapy. A follow-up Doppler (Fig 1) was performed at 2 months, 6 months, 1 year, and 3 years, which showed a patent graft. Computed tomography angiogram (Figs 2 and 3) confirmed the same findings at 3 years follow-up.

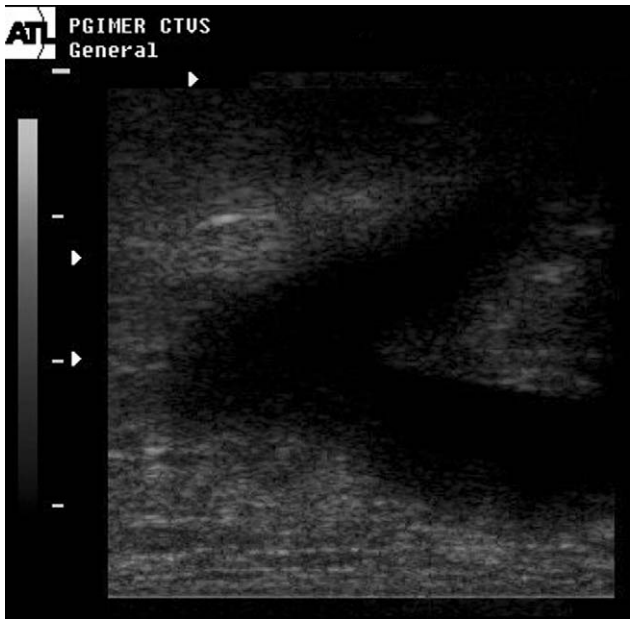

Fig 1. Follow-up Doppler showing patent graft at 1 year.

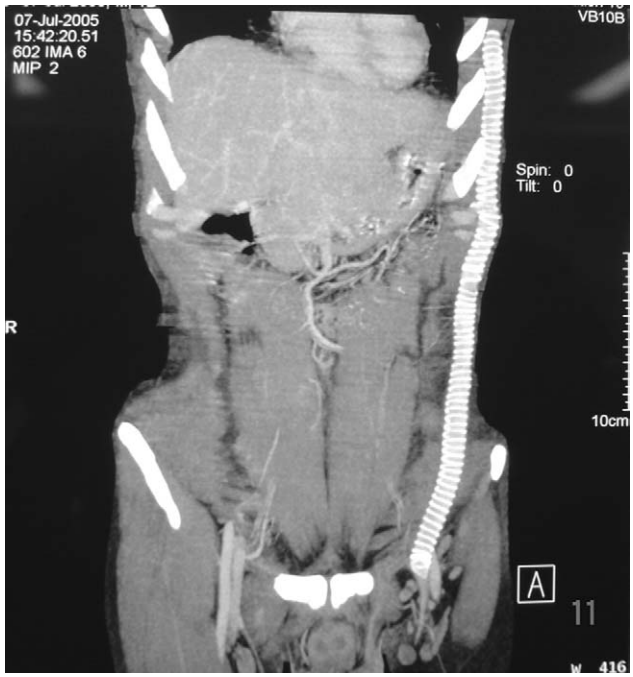

Fig 2. Computed tomographic angiogram (coronal reconstruction) showing patent graft at 3 years follow-up.

Comment

Surgical or endovascular treatment should be considered in patients with SVC syndrome with severe symptoms [8]. Studies of endovascular treatment of nonmalignant SVC syndrome are limited to case reports and small series with short follow-ups [5].

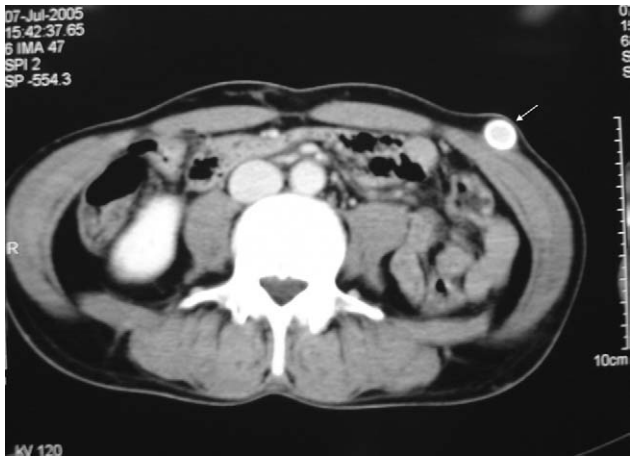

Fig 3. Computed tomographic angiogram (axial view) showing patent graft at 3 years follow-up.

Superior vena cava syndrome has been treated surgically by an internal jugular to the right atrium bypass. Spiral saphenous vein graft, an autologous tissue with low thrombogenicity was first used by Doty and colleagues [1, 2] to bypass the SVC. An expanded polytetrafluoroethylene graft has also been used to bypass the SVC. Recurrent SVC syndrome has been successfully managed with an externally supported femoral vein bypass graft [3].

Saphenojugular bypass as palliative therapy of SVC syndrome caused by bronchial carcinoma was described in 7 patients by Vineze and colleagues [6]. The authors showed that the procedure was just as satisfactory as the results of other operations described for treatment of SVC syndrome. Relief of SVC syndrome by a modified saphenojugular bypass graft has also been described in which a bypass from the right internal jugular to the femoral vein was performed with spliced bilateral greater saphenous veins tunneled inside an externally supported expanded polytetrafluoroethylene graft [7].

Our patient received a ringed polytetrafluoroethylene 10-mm diameter bypass graft from the left internal jugular vein to the left femoral vein brought in a subcutaneous tunnel over the anterior chest and anterior wall. The advantage of this approach is that it avoids entry into the chest, especially useful in situations with extensive mediastinal fibrosis. The graft has remained patent until 3 years of follow-up, and the patient has been relieved of his symptoms. Thus an internal jugular vein to femoral bypass is a unique, simple method for palliation of SVC syndrome.

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FEATURE ARTICLES

OPCAB for Acute LAD Dissection Due to Blunt Chest Trauma

Amit Korach, MD, Curtis T. Hunter, MD, Harold L. Lazar, MD, Richard J. Shemin, MD, and Oz M. Shapira, MD

Department of Cardiothoracic Surgery, Boston Medical Center, Boston, Massachusetts

A 40-year-old male pedestrian was hit by a truck and was admitted with multiple injuries including blunt chest trauma. Electrocardiogram revealed acute anterior ST-segment elevation and myocardial infarction. Coronary angiography demonstrated acute ostial left anterior descending coronary artery dissection. Due to extent and location, the lesion was not amenable for angioplasty. Multiple associated injuries and severely impaired coagulation studies directed us to perform emergency off-pump coronary artery bypass grafting.

(Ann Thorac Surg 2006;82:312–4)

Traumatic coronary artery dissection after blunt chest trauma is extremely rare [1]. It is usually associated with multiple organ trauma. The diagnosis is often delayed and some are only diagnosed postmortem. Treatment options include thrombolytic therapy, percutaneous intervention, and coronary artery bypass grafting [1–3]. We describe a patient with acute coronary artery dissection after blunt chest trauma who had off-pump coronary artery bypass grafting (OPCAB). We believe that this is the first report of OPCAB for traumatic coronary artery dissection.

A 40-year-old man was hit by a truck after stepping off a bus. His past medical history was significant for alcohol abuse with liver cirrhosis. Examination upon arrival revealed a Glasgow coma scale of 15, a heart rate of 118 beats/min, blood pressure at 160/80 mm Hg, room air saturation of 92%, and overt blunt facial and chest wall trauma. Laboratory data included hematocrit of 31%, plate-

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Address correspondence to Dr Shapira, Department of Cardiothoracic Surgery, Suite B-402, Boston Medical Center, 88 E Newton St, Boston, MA 02118; e-mail: oz.shapira@bmc.org.

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