Incidence and Determinants of Spinal Cord Ischaemia in Stent-graft Repair of the Thoracic Aorta

Amabile P., Grisoli D., Giorgi R., Bartoli J.-M., Piquet P. Eur J Vasc Endovasc Surg 2008;35:455-61.

Objectives: Endovascular repair of descending thoracic aortic lesions is associated with a substantial risk of perioperative spinal cord ischaemia (SCI) which may lead to permanent paraplegia.

We performed a retrospective analysis of our experience in the endovascular treatment of descending thoracic aortic lesions to define the incidence of SCI and to identify factors that contributed to its development.

Methods: 67 consecutive patients underwent stent graft repair for descending thoracic aortic lesions including degenerative aneurysm ($n = 19$), type B dissection (acute $n = 2$, chronic $n = 15$), traumatic rupture (acute $n = 14$, chronic $n = 4$), penetrating aortic ulcer ($n = 5$), anastomotic false aneurysm ($n = 4$), mycotic aneurysm ($n = 3$) and embolic aortic lesion ($n = 1$) between June 2000 and June 2005.

All procedures were performed with the patient under general anaesthesia and strict blood pressure monitoring. No patient had intra-operative monitoring of spinal evoked potential or cerebrospinal fluid (CSF) drainage to prevent SCI. Neurological evaluation was realized after recovery from general anaesthesia.

Fifteen factors, including nature of aortic disease, length of aortic coverage, number of stent-grafts, coverage of the distal third of the thoracic aorta and subclavian artery coverage, were investigated as possible predictors of postoperative SCI.

Results: Five patients (7.5%) had postoperative neurological deficits (immediate $n = 2$, delayed $n = 3$) referable to SCI. Univariate analysis showed that length of aortic coverage ($p < 0.001$) and number of stent-grafts deployed ($p = 0.02$) were significant predictors of SCI. Multivariate logistic regression analysis showed that length of aortic coverage was the only independent significant predictor of SCI. ROC curve analysis revealed 205 mm of aortic length coverage as the threshold for increased risk of postoperative SCI ($p = 0.001$), with specificity and sensitivity of 95.2 and 80% respectively.

Conclusion: In our study, length of aortic coverage is the only independent predictive factor of SCI after endovascular treatment with 205 mm as a threshold for increased risk. Hence, methods to prevent SCI, especially those aimed at restoration of an adequate spinal cord perfusion pressure, should be offered to patients requiring extensive coverage of the descending thoracic aorta.

History of the Management of Popliteal Artery Aneurysms

Galland R.B. Eur J Vasc Endovasc Surg 2008;35:466-72.

Management of popliteal aneurysms remains controversial. Debate continues as to when an asymptomatic popliteal aneurysm should be treated and, with concerns regarding the fate of a bypassed popliteal aneurysm and the advent of intravascular stents, what procedure is best.

This paper reviews the history of popliteal artery aneurysm management with particular emphasis on treatment and results before the modern era of arterial reconstruction. The aim of treatment then was to induce thrombosis. Now it is to prevent thrombosis.

Bypass to the Perigeniculate Collateral Arteries: Mid-term Results

de Latour B., Nourissat G., Duprey A., Berger L., Favre J.P., Barral X. Eur J Vasc Endovasc Surg 2008;35:473-9.

Purpose: The purpose of this report is to present mid-term results of infrainguinal revascularizations using either the highest genicular artery or medial sural artery as the distal anastomosis site.

Material and methods: Between 1996 and 2005, a total of 59 bypass procedures to perigeniculate collateral arteries were performed in 57 patients (14 women, 43 men) with a mean age of 74. Fifty five patients presented with critical ischemia (tissue loss in 28 and rest pain in 27). Four patients presented with intermittent claudication. Mean ankle brachial index was 0.48. The distal anastomosis site was the highest genicular artery in 18 patients, medial sural artery in 37 cases, highest genicular and/or medial sural artery and/or tibial artery in sequential fashion in four cases. The proximal anastomosis was to the common femoral artery in 26 cases and superficial femoral artery in 33.

Results: There were two deaths during the immediate postoperative period. Mean follow-up duration was 35 months (range 1–108 months). One patient was lost to follow-up. Six patients required major amputation. At 3 years, primary patency was 65 ± 7%, secondary patency was 70 ± 7%, limb salvage and survival rate were 90 ± 4% and 64 ± 7% respectively.

Conclusion: Bypass to perigeniculate collateral arteries provides acceptable patency and limb salvage rates.

Guidelines for Clinical Studies with Compression Devices in Patients with Venous Disorders of the Lower Limb

Rabe E., Partsch H., Jünger M., Abel M., Achhammer I., Becker F., Cornu-Thenard A., Flour M., Hutchinson J., Ißberner K., Moffatt Ch., Pannier F. Eur J Vasc Endovasc Surg 2008;35:494-500.

Objectives: The scientific quality of published clinical trials is generally poor in studies where compression devices have been assessed in the management of venous disease. The authors' aim was to establish a set of guidelines which could be used in the design of future clinical trials of compression treatments for venous diseases.

Design: Consensus conference leading to a consensus statement.

Methods: The authors form a expert consensus group known as the International Compression Club (ICC). This group obtained published medical literature in the field of compression treatment in venous disease by searching medical literature databases. The literature was studied by the group which attended a consensus meeting. A draft document was circulated to ICC members and revised until agreement between contributors was reached.

Results: The authors have prepared a set of guidelines which should be given consideration when conducting studies to assess the efficacy of compression in venous disease.

Conclusions: The form of compression therapy including the comparators used in the clinical study must be clearly characterised. In future studies the characteristics of the material provided by the manufacturer should be described including in vivo data on pressure and stiffness of the final compression system. The pressure exerted on the distal lower leg should be stated in mmHg and the method of pressure determination must be quoted.