RADCAR study shows effects of learning curve on transradial carotid artery stenting

A study recently published in EuroIntervention and presented at EuroPCR (19–22 May, Paris, France) shows that there is a learning curve that needs to be factored in when interventionists begin to use the transradial approach for carotid artery stenting.

Results from RADCAR (Radial access for carotid artery stenting study), a multicentre, prospective, randomised study (1,200 patients), performed to compare the outcomes and complication rates of transradial and transfemoral carotid stenting, have revealed that the transradial approach for carotid artery stenting is safe and efficacious. However, study authors Zoltan Rusza, Semmelweis University, Budapest, Hungary, and colleagues, write that the results show that the crossover rate is higher with transradial access.

The latest results set out to determine whether radial artery access is associated with an increase in fluoroscopy time, x-ray dose, procedure time, contrast consumption and other procedural variables over a three-year period during the RADCAR multicentre study comparing the femoral and radial approach for carotid artery stenting.

The authors further report that there are no differences in total patient population procedure duration and fluoroscopy time between the two approaches, but that the radiation dose is significantly higher in the transradial group and that the number of days spent in hospital for patients is shorter when transradial access is used.

“The incorporation of the radial access for carotid artery stenting led to a decrease in fluoroscopy time, procedure time and contrast consumption over the last three years,” the authors write, alluding to the learning curve of the operator at play.

The researchers evaluated the clinical, angiographic and procedural data of 260 consecutive patients who were treated between 2010 and 2012 by carotid stenting with cerebral protection as they were considered as being at high risk if they underwent carotid endarterectomy. The patients were randomised to either receive carotid artery stenting by using the transradial approach (n=130) or the transfemoral approach (n=130).

The primary combined endpoint was major adverse cardiac and cerebral events and rate of access site complications. The secondary endpoints were: angiographic outcome of the procedure, fluoroscopy time and x-ray dose, procedural time, crossover rate to another puncture site, and hospitalisation in days.

Rusza and colleagues collected and analysed the data by the first, second and third year to investigate the procedural results over time. They found that procedural success was achieved in all 260 patients (100%). In the transradial group, the success by year was 86.2%, 81.8% and 95.6% (p=non-significant [ns]). The procedure time (1,220 vs. 1,500, p=ns) and fluoroscopy time (540 vs. 501, p=ns) were not significantly different, but the radiation dose was significantly higher in the transradial group vs. the transfemoral group (195 vs. 148 Gycm2, p<0.05).

In the third study year, the fluoroscopy time (476 vs. 558, p<0.05) and procedure time (1,500 vs. 1,800, p<0.05) was significantly lower in the transradial group as compared with the transfemoral group, but the radiation dose was significantly higher (110 vs. 90 Gycm2).

Illustrating the effect of the learning curve, the investigators also noted that after the adoption of the transradial approach, over three years, there was a decrease in fluoroscopy time, procedure time and contrast consumption. Hospitalisation days and contrast consumption were lower in the transradial group. Major access site complication was encountered in one patient (0.9%) in the transradial and in one patient (0.8%) in the transfemoral group (p=ns). The incidence of major adverse cardiac and cerebral events was 0.9% in the transradial group and 0.8% in the transfemoral group (p=ns).

Control of infection with prosthetic grafts: added value of Intergard Synergy

The Intergard Synergy graft (from Maquet) is the first vascular prosthesis combining two well-known antimicrobial agents: silver acetate and triclosan. While silver acetate and triclosan are effective antimicrobial agents alone, their power to prevent development of infection is intensified when combined and offers increased antimicrobial properties. In vitro testing of the Intergard Synergy vascular graft demonstrates antimicrobial efficacy against a broad spectrum of micro-organisms including MRSA (methicillin-resistant Staphylococcus aureus).

The Intergard Synergy graft was featured in an edited live case presented at the Charing Cross Symposium (28 April–1 May, London, UK). The case was performed by Jean-Paul de Vries, head, Department of Vascular Surgery, St Antonius Hospital, Nieuwegein, The Netherlands. The device was used to treat a 62-year-old female patient with a mycotic abdominal aorta.

The patient was referred to St Antonius Hospital in February 2015 with lower back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood tests showed fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication.

“CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta. “It took us some time to have a clear view of the juxta-renal aorta because of the severe adhesive tissue,” De Vries explained. “The patient was already on intravenous antibiotics (Cefotaxime). She had severe back pain, abdominal pain, fever and malaise. Laboratory tests showed anaemia, elevated leucocytes count and an elevated CRP of 264. Blood culture showed gram-positive cocci. The patient’s medical history included hypertension, hypercholesterolaemia, a transient ischaemic attack in 2009, chronic obstructive pulmonary disease, a myocardial infarction and treatment with bypass graft in 2014 and Leriche syndrome in 2014 as well as severe claudication. “CT scans showed inflammatory mass of the graft with the greater omentum flap. After performing a transabdominal incision, De Vries said, it was possible to see severe inflammation with approximately 250ml of pus between the bowel and the aorta.