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Humeral arterial access: An alternative route to the femoral artery in the endovascular treatment of acute stroke[☆]

El acceso arterial humeral: una vía alternativa al acceso femoral en el tratamiento endovascular del ictus agudo

Dear Editor:

The femoral artery is the vascular access route most commonly used in cerebral endovascular procedures. Nevertheless, access at this site is impossible in a number of situations, such as atheromatosis of the femoral arteries, elongation of the supra-aortic trunks, and anatomical variations of the aortic arch.¹ When the femoral access cannot be used, endovascular therapy may be delayed or even contraindicated according to some protocols. Here, we describe the case of 2 patients with ischaemic stroke who were able to undergo endovascular treatment by means of a brachial approach only.

Case 1: male patient aged 45 years, diagnosed with basilar artery thrombosis, who arrived at the angiography room 6 h and 20 min after symptom onset. Twenty minutes later, a usable femoral access was obtained. However, even after multiple attempts, the right vertebral artery could not be catheterised due to arterial elongations (the left vertebral artery was hypoplastic). We therefore used a right transbrachial approach and achieved basilar artery recanalisation 33 min after puncture.

Case 2: male patient aged 71 years with a history of peripheral artery disease. He arrived at the angiography room with an ischaemic stroke in the territory of the left sylvian artery due to an M1 proximal occlusion evolving over 4 h and 5 min. Angiography of the aortoiliac axis through the femoral access showed pre-occlusive stenosis of the

right iliac artery with occlusion of the left iliac artery. After 4 h and 50 min of onset, we gained access through the right brachial vein and then recanalised the medial cerebral artery in 49 min.

The transfemoral approach (Seldinger technique) is the standard access route for neurovascular surgical procedures, as it allows the use of larger devices and provides better navigation capabilities. The dose of radiation is lower, and the femoral artery has a low thrombotic complication rate. The axillary, humeral and radial puncture sites are all included in the brachial approach. The axillary artery allows use of 8 French introducers. However, the risk of haematoma is higher since haemostatic compression is more difficult at this site. Although the humeral artery allows use of introducers of up to 6 French and offers easy access, the risk of arterial thrombosis is high in prolonged procedures. The radial artery allows use of introducers as large as 6 French, but the risk of arterial thrombosis can be as high as 10%. Over the past few years, we have read published results from isolated series in which transradial or transbrachial approaches were used for diagnostic cerebral arteriography,² and for stents in stenosis of the anterior and posterior circulation.^{3,4} Using a radial or brachial access eliminates the risk of retroperitoneal haemorrhage and allows the patient to resume walking early on. This alternative is used when vessel tortuosity makes it difficult or impossible to reach the vertebral artery via the femoral artery. Nevertheless, for purposes of the current endovascular treatment for acute stroke, the smaller diameter of the brachial artery limits the gauge of the introducer normally used with 7 or 8 French balloon-tipped guide catheters needed for aspiration thrombectomy. It also limits use of devices needing catheters with a larger internal lumen. Other factors, such as lack of experience with this approach and its increased complexity, which may prolong the procedure, also limit the use of brachial access as a first-choice surgical option in acute stroke. Nevertheless, there are no controlled clinical trials comparing the efficacy and safety of the different approaches. The fact that new devices are being designed could change that situation.

Two extensive meta-analyses were recently published which compare transradial and transfemoral access for percutaneous coronary intervention procedures.^{5,6}

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Although the transradial approach leads to very few local complications, the procedure failure rate is significantly higher than that of the transfemoral approach (7.2% vs 2.4%). This is due to either the difficulty of re-canalising the radial artery or subsequent problems with manipulating the catheter.⁵

During the acute phase of stroke, endovascular treatment may be delayed or even discontinued when the femoral approach does not allow access to the thrombosed cerebral artery (aortoiliac occlusion, severe vascular elongation, etc.). In such cases, we should consider the brachial approach as an alternative which could compensate for potential delays in providing this urgent treatment. It has been proven that "time is brain" and neurovascular surgical procedures are often carried out within short time windows. Furthermore, atherosclerosis is a systemic disease, and it is common for patients with ischaemic stroke to suffer from peripheral artery disease as well.⁷

In the cases described here, we could not use a femoral approach due to artery elongation or severe peripheral artery disease. This delayed the endovascular procedure, but the brachial approach enabled quick access to treatment. Given that the increasing use of endovascular procedures during the acute phase of stroke and the need to begin treatment as soon as possible, it is advisable to optimise all measures that potentially prevent treatment delay. We should be aware that vascular access route is an important factor that needs to be evaluated in future studies.

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Linear scleroderma en coup de sabre and epilepsy: Presentation of a case in a child[☆]

Esclerodermia lineal en golpe de sable y epilepsia. A propósito de un caso infantil

Dear Editor:

Localised scleroderma (LS) is a rare autoimmune disorder that primarily affects the skin and may also affect underlying fatty, muscle, or bone tissue.¹ The estimated prevalence of this disease is fewer than 3 cases in 100 000 inhabitants.²

LS affects the skin almost exclusively, and with rare exceptions, does not injure internal organs. It is categorised into 5 subtypes: circumscribed morphea, linear



Figure 1 Patient photo in which we observe the typical left frontoparietal lesion "en coup de sable".

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