

INFECTIOUS COMPLICATIONS IN ARTERIAL RECONSTRUCTIONS

V. Knyazhev

Key-words: arterial reconstruction — arterial obliterating disease — infection — inguinal lymph nodes

Purulent complications present one of the most complex problems in vascular surgery because of the severity of clinical manifestations, unsatisfactory therapeutic results and inefficiency of prophylactic measures. These questions become more important when synthetic prostheses are applied. Wound infection complicating reconstructive-restorating vascular operations in about 2—10 per cent of the patients (1, 3, 7, 8) can be superficial or deep in nature. Deeply penetrating infection is most dangerous, especially when synthetic prosthesis is also involved. Lethality rate in lesions of the proximal anastomosis reaches up to 100 per cent but of the distal one up to 50 per cent, approximately (1—3, 5, 8). According to some authors (8, 9), 65 per cent of these complications can be observed during the early postoperative period while late effects can appear in an interval up to 7 years after operation (4, 6).

Material and methods

Recently, in 1986 — 1987, we performed an analysis of the microflora from the skin in the inguinal flaps (the zone of forthcoming reconstruction), in the lymph nodes there during the operation and in the presence of a gangraena — from the skin of the foot in total of 25 patients operated on the occasion of chronic arterial thrombobliterations. All the patients studied were aged between 38 and 75 years. There were males only. 16 patients were at the IIIrd stage of the disease (with pains at rest) and 9 ones were at the IVth stage (with distal gangraena). Five patients had diabetes mellitus. Aorto— or ileofemoral by-pass by using of synthetic extransplantation material was performed in 6 patients while reconstruction by means of autovenous or arterial material was carried out in the rest 19 patients.

Results and discussion

Purulent complications of operation wounds were registered in 6 patients. There was a deep wound infection in two cases and a superficial one in 4 patients.

Skin microflora in the inguinal area was established in 22 out of 25 patients. There was an epidermic staphylococcus in 12 cases (48 per cent), Klebsiella in 6 (24 per cent), Staphylococcus aureus in 5 (20 per cent), and Proteus in 2 (8 per cent). Skin microflora was almost equally frequently found out in patients with and without skin gangraena of distal type. It was present in one out of three patients aged up to 40 years and in 11 out of 12 ones aged over 60 years.

Microflora was most sensitive to the following antibiotics: Gentamycin (77.8 per cent) and Streptomycin (66.7 per cent) while it was most resistant to Ampicillin (100 per cent) and Kanamycin (55.6 per cent).

Microflora was isolated from intraoperatively extracted inguinal lymph nodes in 9 patients. Six of them had distal gangraena and four — diabetes mellitus. Both *Staphylococcus epidermidis* and *Staphylococcus aureus* were observed in 3 cases, *Klebsiella* in 2, *Proteus* in one with almost one and the same antibiogram. Identical microflora from the two regions occurred in 3 patients.

Microflora was not established in one case only out of 9 distal gangraena patients. *Klebsiella* was observed in 4 cases, *Proteus* and *Staphylococcus aureus* in two. «Re-covering» of the microflora from the destruction zone with that from the lymph nodes was found out in 5 patients while an identical microflora in the three areas was observed in 2 cases. These two patients had a deep wound infection in spite of the autolytic plastic material used for reconstruction. The isolated microflora in these two cases was cephaloresistant. Wound infection complicated diabetes correction in one patient. It resulted in a thrombosis of the femoropopliteal shunt and thus although thrombectomy with partial-recanalization was performed the outcome was a leg amputation. The other patient showed a secondary operative wound healing which induced the formation of fibrous congestion compressing autovenous flap and stenosing in the area of reconstruction.

Superficial wound infection had not caused any serious complications in our patients even in those with artificial prostheses. Microbiological examination demonstrated that they were sterile in all the patients.

Conclusions:

1. Penetration of pathogenic microflora into the inguinal lymph nodes can present a menace to the outcome of arterial reconstruction in this region.
2. Careful sanitation of infectious foci and prevention of exogenous microflora infection have a crucial importance for prophylaxis of purulent postoperative complications.

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