PHD file:

EXTRA-ANATOMIC BYPASS OPERATIONS – INDICATIONS AND THERAPEUTICAL OPTIONS

ABSTRACT

Scientific Coordinator
Prof. Dr. Constantin Copotoiu

PHD Candidate
Dr. Ovidiu Vasile Jimborean

The paper is structured into 2 parts:
1. General principles concerning diagnosis and treatment in peripheral arterial disease (PAD)
2. Personal research.
   This part is divided into 3 chapters:
   2.1. 10 years (1997 - 2006) personal experience in the surgical treatment PAD patients
   2.2. Personal experience in the use of extra-anatomic bypass operations (EBO): indications and therapeutical options
      2.2.1. Personal surgical education in the research field (extra-anatomic bypass operations)
      2.2.2. Analysis of the PAD patients who underwent on extra-anatomic procedures (same surgeon, same period)
      2.2.3. Final conclusions and proposals

General principles concerning diagnosis and treatment in peripheral arterial disease (PAD)

In this part there were presented both fundamental classic and up-to-date recommendations concerning diagnosis and treatment (medical and invasive) in PAD (315 bibliographic titles)

Personal research

- **Author’s education in cardio-vascular surgery** in Hopital Civil of Strasbourg (France) during 1993-1994:
  - 547 open-heart operations
  - 22 venous operations
  - 194 arterial operations

- **Analysis of the PAD operated patients** during 10 years (1997-2006):
  - 799 PAD operated patients
    - 693 (86.7%) = arterial bypass operations
    - 574 anatomic bypass operations
• 119 extra-anatomic bypass operations + 11 as secondary arterial reconstructions
  • 599 (87%) in severe (invalidant ischemia)
  • Distribution upon age: over 60 years - anatomic bypass 57%, extra-anatomic bypass 72%

The increase of **high-age patients** (p=0.0028) with the increased rate of **severe ischemia** (p=0.0081) determined a significant increase of EBO during these 10 years compared with the former 5-years period: EBO rate from 5% to 17% of the bypassed patients (p=0.005125)

- Major postoperative complications
  - **Prosthesis** infections: 8 after EBO (6,1%) in subcutaneous site
    - Routine use of **obturator bypass** (7 patients) **for the first time in Romania** (beginning from 1995) for groin prosthesis infection
  - Graft thrombosis and secondary arterial reconstructions (SAR): 68 (90%) on vascular prosthesis from a total of 77

This observation determined us to use the autogenous grafts for bypassing the suprainguinal occlusive lesions routinely (26 patients with femoro-femoral or ilio-femoral crossover bypass operations); venous crossover operations were followed by 1 late thrombosis

- 5 years major amputations after EBO: 13.8% (literature = 16.6%)
- 5 years mortality after EBO: 1.68% (literature = 0 – 8%)

- Extra-anatomic bypass operations: therapeutical options and proposals:
  - **Autogenous venous grafts** in crossover bypass operations (no such routine use in literature in primary reconstructions)
  - **Original technique**: ilio-femoral crossover bypass simultaneously with tension-free mesh abdominal wall repair: innovation-certificate procedure in course
  - Axillary artery preparation through “delto-pectoralis sulcus”
  - Extra-anatomic prosthesis infection prophilaxy
    - **Under-aponevrotic course of the axilo-femoral prosthesis = original technique**
    - Obturator bypass for groin prosthesis infection (cryopreserved homgrafts not available in Romania)
    - Axillo-bifemoral bypass after excision of aortic infected prosthesis (cryopreserved homgrafts not available in Romania)
      - The need of a tissue and organ bank in this region (cryopreserved homgrafts provider)
  - The need of a regional integrated informational system to improve the long-term surveillance of the vascular patients