



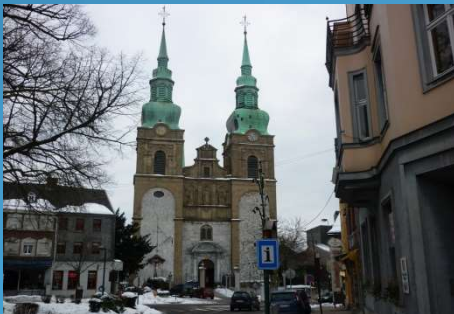
ST. NIKOLAUS-HOSPITAL EUPEN

CHU
de Liège

Laparoscopic aorto-bifemoral bypass: retrospective study of 16 cases

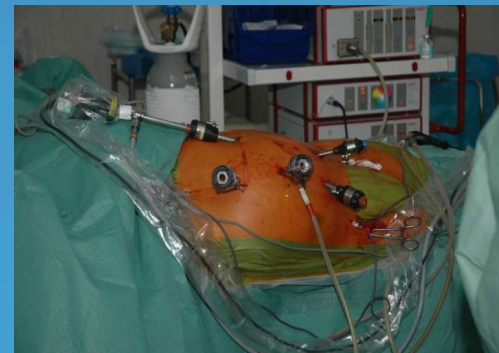
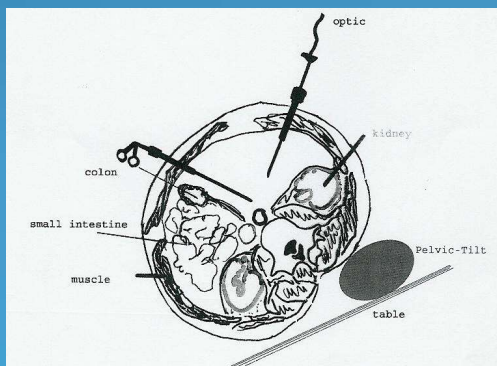
A. Kerzmann^{1,2}, J-P. Lavigne², J. Quaniers²,
E. Passelecq^{1,2}, J-O. Defraigne²

¹ Sankt Nikolaus Hospital, Eupen
² CHU Sart-Tilman, Liège



Patients and methods (1)

- ✓ retrospective study from January 2007 to December 2012
- ✓ 16 patients underwent laparoscopic aorto-bifemoral bypass
- ✓ transperitoneal left retrocolic prerenal approach (Coggia)
- ✓ at least one experimented surgeon was present



Patients and methods (2)

- ✓ mean age: 59 years old (43 to 69)
- ✓ sex ratio: 9 women and 7 men
- ✓ symptoms:
 - ✓ Fontaine's stage IIb 75%
 - ✓ Fontaine's stage III 19%
 - ✓ Fontaine's stage IV 6%

Patients and methods (3)

Cardio-vascular risk factors

smoking	100%
arterial hypertension	75%
dyslipemia	50%
diabete	0%
coronary disease	6%
stroke	12%

Results (1)

Past history


- ✓ past abdominal surgery:
 - ✓ 1 had splenectomy
 - ✓ 2 had caesarians operations
 - ✓ 1 had hysterectomy and appendectomy
- ✓ 50% of the patients had past history of iliac PTA
- ✓ 1 patient had past history of cross-over bypass

Results (2)

Indications: TASC

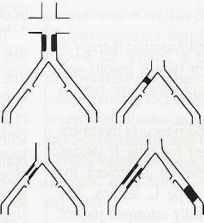
Type A lesions

- Unilateral or bilateral stenoses of CIA
- Unilateral or bilateral single short (<3 cm) stenosis of EIA



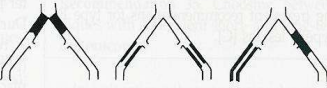
Type B lesions:

- Short (<3cm) stenosis of infrarenal aorta
- Unilateral CIA occlusion
- Single or multiple stenosis totaling 3–10 cm involving the EIA not extending into the CFA
- Unilateral EIA occlusion not involving the origins of internal iliac or CFA



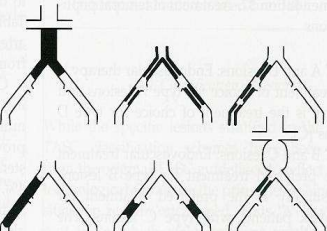
Type C lesions

- Bilateral CIA occlusions
- Bilateral EIA stenoses 3–10 cm long not extending into the CFA
- Unilateral EIA stenosis extending into the CFA
- Unilateral EIA occlusion that involves the origins of internal iliac and/or CFA
- Heavily calcified unilateral EIA occlusion with or without involvement of origins of internal iliac and/or CFA



Type D lesions

- Infra-renal aortoiliac occlusion
- Diffuse disease involving the aorta and both iliac arteries requiring treatment
- Diffuse multiple stenoses involving the unilateral CIA, EIA, and CFA
- Unilateral occlusions of both CIA and EIA
- Bilateral occlusions of EIA
- Iliac stenoses in patients with AAA requiring treatment and not amenable to endograft placement or other lesions requiring open aortic or iliac surgery



6% with past history of iliac PTA

6% with past history of cross-over

38%

50% with one aneurysm (35 mm)

Results (3)



Surgery

operative time: 229 min
(180 to 315)

aortic clamping time: 52 min
(42 to 75)

one conversion for calcified aorta

<u>operati ve time</u>	<u>clamping time</u>	<u>remarks</u>
180	35	
315	42	
195	45	
na	na	
270	-	conversion
240	60	
195	50	
na	na	
210	45	toe amputation
300	70	termino-terminal anastomosis
195	40	
210	50	
240	60	
180	60	
200	60	epigastric hernia
270	75	

Results (4)

Early complications

- ✓ mean ICU stay: 1,4 days (1 to 4)
- ✓ mean hospital stay: 8,7 days (5 to 19)
- ✓ no death
- ✓ 1 per-operative non STMI
- ✓ 1 laparotomy at the second post-operative day for suspicion of bleeding
- ✓ 1 pulmonary infection
- ✓ 2 superficial groin infections
- ✓ most of the patients could eat at the first day and mobilize at the second day

Results (5)

Late complications

- ✓ mean follow-up : 29 months
- ✓ one operation at one year for intestinal occlusion
- ✓ 4 thrombosis of one side of the graft, treated by thrombectomy with femoral angioplasty except one treated by cross-over
- ✓ 2 distal anastomotic stenosis, treated by femoral angioplasty
- ✓ no amputation
- ✓ primary graft patency 81% and secondary graft patency 94%

Comparison with studies (1)

	<i>study</i>	<i>numb.</i>	<i>clamping time (min.)</i>	<i>operative time (min)</i>	<i>convers.</i>	<i>hospital stay (d.)</i>	<i>follow-up</i>	<i>mortality</i>
<i>Olinde and al. 2005</i>	retrospective	22	89,5	267	2 (9%)	4	16,3	4,5%
<i>Remy and al. 2005</i>	prospective	21	60	240	1 (4,7%)	7	1	0
<i>Di Centa and al. 2008</i>	prospective	150	81	260	5 (3,4%)	7	25,2	2,7%
<i>Bruls and al. 2012</i>	Multicentric retrospective	95	62	242	21 (20%)	8	23,5	0
<i>Tiek and al. 2012</i>	multicentric randomised controlled trial	14	na	259	0	5,5	1	0
<i>our study 2013</i>	retrospective	16	52	229	1 (6,2%)	8,7	29	0

Comparison with studies (2)

- ✓ We had 5 early complications. Our morbidity is similar to that of open approach.
- ✓ Tiek and al. reported significant decrease in post-operative morbidity compared to open surgery.
- ✓ The laparoscopic procedure reduces the incidence of laparotomy-related complications.

Conclusions (1)

- ✓ Laparoscopic aorto-bifemoral bypass is a **safe** operation, even in a small non-university hospital.
- ✓ This procedure gives the **same patency** rates as conventional open surgery.
- ✓ Laparoscopic approach **reduces operative trauma** with less bowel dysfunction, less post-operative pain, faster recovery and shorter hospital stay.

Conclusions (2)

- ✓ The technique is **challenging** for the surgeon.
- ✓ **Training** on a pelvic-trainer or animal is recommended.
- ✓ The **presence of an experimented surgeon** in laparoscopic aortic operation was a great help at the beginning of our experience.
- ✓ This results **stimulate** our team to go on with the laparoscopic approach.