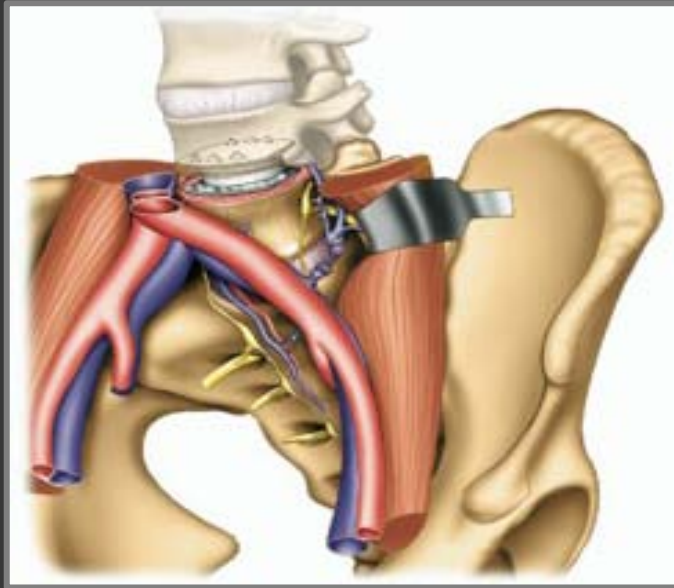


# Complication rates in the anterior lumbar retroperitoneal approach – a single surgeon series in a tertiary referral center



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# DISCLOSURE INDICATION

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# Anterior Lumbar Retroperitoneal approach

- Frequently used in the treatment of a variety of spinal disorders
- Increasingly used, since there is a significant increase in the number of spinal procedures
- In the past: for Pott disease, malignancies, fractures  
Nowadays: for Degenerative Spine Disease
- Both for fusion and artificial disc replacement

## **Anterior Lumbar Retroperitoneal approach**

- Advantages vs posterior: no paraspinal muscle trauma, reduced incidence of nerve damage, larger interbody fusion device, disc replacement
- Advantages vs transperitoneal: x10 lower risk of retrograde ejaculation, no need for bowel retraction
- Demanding approach - in many centers it is performed by an access surgeon

# Complications

## ➤ CLASSIFICATION 1

- Intraoperative (vascular, neural, genitourinary tract, visceral, access failure, CSF leak etc)
- Postoperative (incisional hernia, vein thrombosis, prolonged ileus, infection, fusion or metal work failure, revision surgery etc)

## ➤ CLASSIFICATION 2

- Access related (access failure, incisional hernia, retrograde ejaculation, vascular/bowel/ureter injury, lower limb weakness etc)
- Non-access related (vascular injury during instrumentation, malposition of the implants, CSF leak etc)

## Access related complications: overall published rates 8-38%

- Gumbs et al: **8%** - *Arch Surg.* 2005 Apr;140:339-343
- Bianchi et al: **9.7%** - *Ann Vasc Surg.* 2003 Mar;17(2):137-42
- Brewster et al: **15.5%** - *World J Surg.* 2008 Jul;32(7):1414-9
- Hamdan et al: **11%** vascular injury only - *J Vasc Surg.* 2008 Sep;48(3):6504
- Chiriano et al: **24%** vascular injury only - *J Vasc Surg.* 2009 Jul;50(1):148-51
- Jarrett et al: **16%** - *J Spinal Disord Tech.* 2009 Dec;22(8):559-64
- Rajaraman et al: **38.3%** - *J Neurosurg.* 1999 Jul;91(1 Suppl):60-4

# Patients - Methods

- Prospective study
- Between 2006-2011
- Guy's Hospital, London
- 209 patients that underwent anterior retroperitoneal lumbar spine surgery for degenerative spine disease
- Age range: 23-70
- Female 113 (54%), Male 96 (46%)
- Single spinal surgeon

# Patients - Methods

Table 1. Anterior exposure to the spine

	Total (%)
Total Disc Replacement (TDR)	111 (53)
Anterior Lumbar Interbody Fusion (ALIF)	58 (28)
Hybrid (TDR+ALIF)	40 (19)



# Results

Overall complications rate (access related):

2.7% (6 patients)

- **2 pts** : inability to mobilize the adherent vascular structures to gain access to L4/5 segment (intraoperative access related complication) – posterior fusion performed
- **2 pts**: incisional hernia – surgical repair
- **1 pt**: retrograde ejaculation (resolved after 8 months)
- **1 pt**: left leg sympathetic dysfunction (resolved after 3 months)

# Results

**Table 2. Complications (access related)**

<b>Complication</b>	<b>No (%) of Pts</b>
Inability to mobilize vessels	2 (0.9)
Incisional hernia	2 (0.9)
Retrograde ejaculation	1 (0.45)
Sympathetic dysfunction	1 (0.45)

## Discussion

- Anterior retroperitoneal lumbar approach:
  - Demanding
  - Increasingly used
  - Performed by either spinal or access surgeons, depending on the center
- Potentially serious complications related to the approach may occur
- Complication rates vary in the literature
- Debate continues whether the approach should be performed by spinal or access surgeons
- Low complications rate at our institution – approach performed by a single spinal surgeon

## Conclusion

### *Anterior retroperitoneal lumbar approach:*

- The surgeon must be intimately familiar with the anatomy
- The procedure can be safely performed by a spinal surgeon who is trained
- The presence of an access surgeon is recommended in those centers that are not regularly exposed to this approach