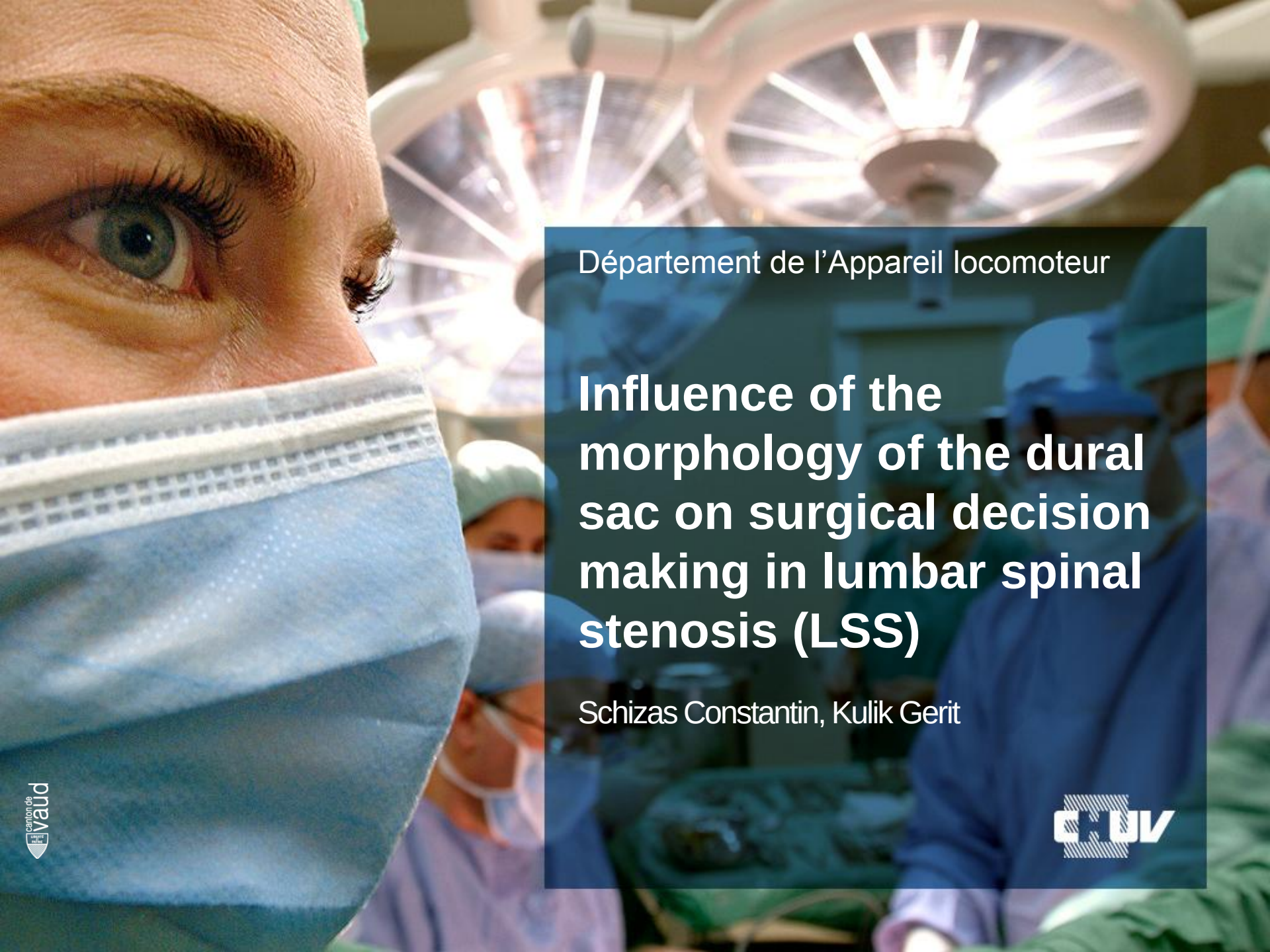


Département de l'Appareil locomoteur

Influence of the morphology of the dural sac on surgical decision making in lumbar spinal stenosis (LSS)

Schizas Constantin, Kulik Gerit

Background

- Published evidence based guidelines:
  Exist for LSS,
  Without radiological severity thresholds

- Radiological measure of LSS:
  DSCA (dural sac area)< 100 mm^2 and <75mm^2

Grading based on the morphology of the dural sac

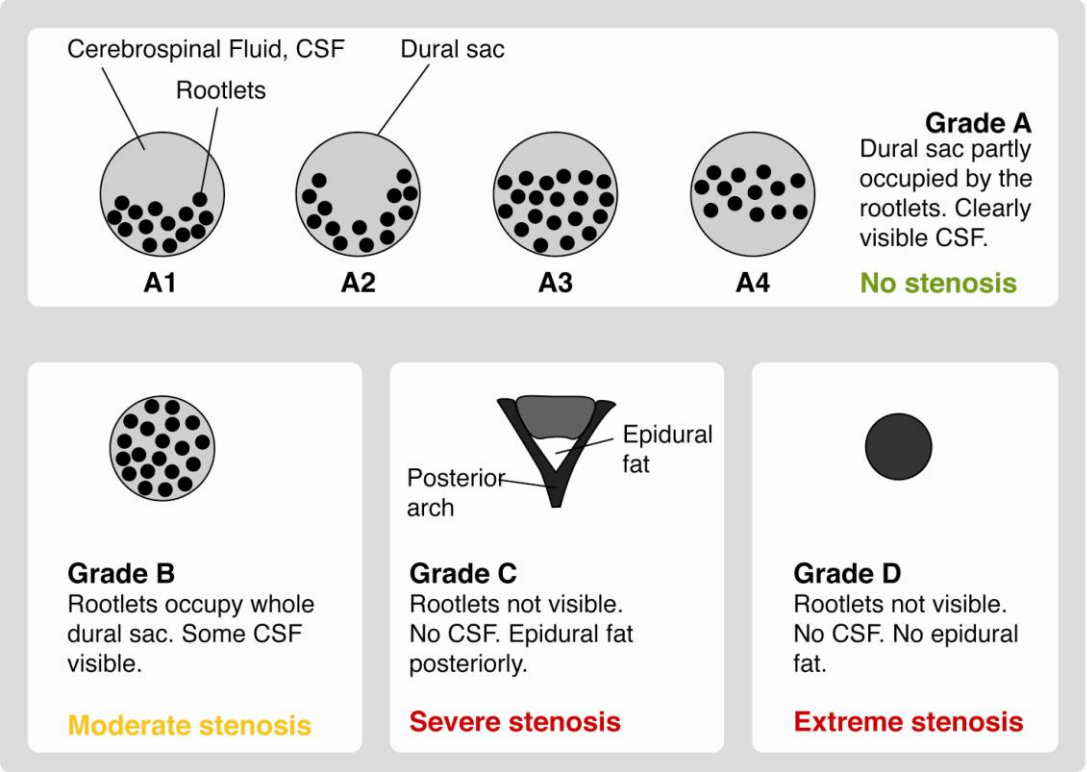
- **Prognostic value:**
A&B no need for surgery.
C&D likely to fail conservative treatment*

- **Less dependent**
on image acquisition technique than surface measurements**

*Schizas et al Spine 2010

**Henderson et al ESJ 2011

axial T2 MRI



Hypothesis

Surgeons base their radiological decision making on DSCA measurements

(DSCA commonest used stenosis assessment tool).

Methods

- **Internet survey:**
  Link sent to members of three national or international spine societies

- **20 images to appraise (Morphology grades range A to D):**
  1. Ten axial T2 MRI images Presented without DSCA
     (ten patients, either low back pain or LSS)

  2. Re-shuffled above MRI images Disclosed DSCA
     DSCA measurements in mm^2 (14 to 226 mm^2)

- **Outcome measure:**
  The number of surgeons who would proceed to decompression for a given *grade* or *surface area* (DSCA)

Methods

- **Additional information given:**
  1. Symptoms of neurological claudication were severe enough to warrant surgery
  2. Patients were otherwise fit for surgery

- **Statistical analysis:**
  Fisher's exact test

Results

- **Responses:**
  137 valid = 2740 clinical scenarios for analysis
- **Physician speciality:**
  100 orthopaedic surgeons, 30 neurosurgeons, 7 others

- **Morphological classification:**
  29 came across beforehand
- **Free text remarks** (41 responders):
  Insisted on patient history & physical examination

Results

DSCA < of 100mm²:
88% would operate

DSCA > 100mm²:
29% would operate (p=0.0001)

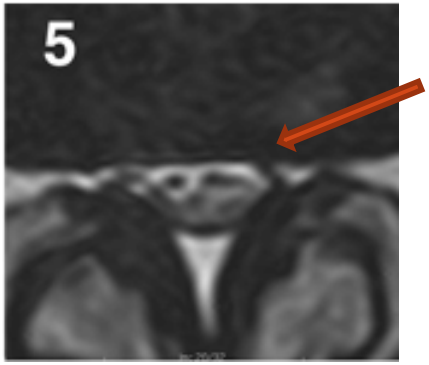
- **Operative rate of grade C:**
  Higher for neurosurgeons than orthopaedic surgeons (p=0.0048)
- **Operative rate of grade B:**
  57% of surgeons would operate

No influence:

- Disclosure of DSCA
- Number of years in practice
- Physician density in the country of practice
- Prior knowledge of the morphological grading

Discussion

- **Surgeons give priority to morphology:**
  Responses given to the cases of
  B grade < 100mm^2 and C grade > 100mm^2

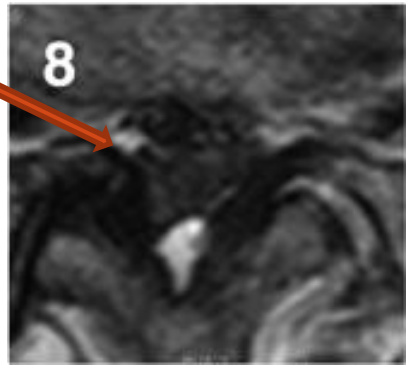


Grade B
70mm^2

OP rate:
71%

Grade C
126mm^2

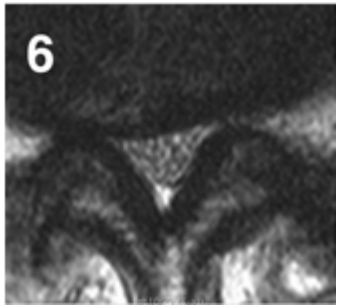
OP rate:
80%

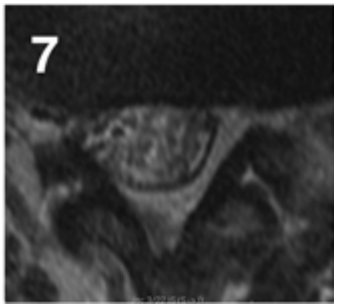


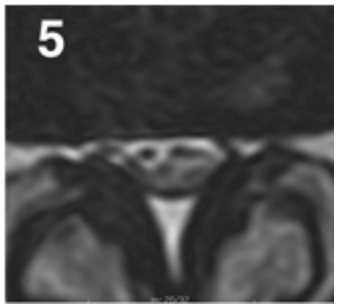
Discussion

- **B grades:**
  B grades do not seem to warrant surgery for an average period of 3.1 years

- No guidelines in surgical indication relative to radiological LSS







Discussion

- **Other factors influencing decision making:**
  financial, access to health resources etc.

  Present study:
  Unbiased report of current beliefs on surgical indications

- **Response rate (22%):**
  Compares with others (15% surgeons, 26% paediatricians)
  Methods to improve: Combine internet and surface mailing

- **Further research:**
  DELPHI round or RAND UCLA

Conclusion

- **Across large geographical European regions:**

  Surgical decision based on morphology of the dural sac rather than the DSCA.

- Grading severity of radiological stenosis based on morphology is probably more relevant than measuring DSCA

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