



Polenov Russian Neurosurgery Research Institute
Federal Almazov North-West Medical Research Centre



Intraoperative rectal manometry in lipomyelomeningocele surgery (initial results)

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Lipomyelomeningocele surgery

CLINICAL STUDIES

Long-Term Outcome of Total and Near-Total Resection of Spinal Cord Lipomas and Radical Reconstruction of the Neural Placode, Part II: Outcome Analysis and Preoperative Profiling

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OBJECTIVE: To show the long-term benefits of total and near-total resection of complex spinal cord lipomas and reconstruction of the neural placode.

METHODS: We analyzed 238 patients with dorsal, transitional, and chaotic lipomas who had total resection as described in part I for overall progression-free survival probability (PFS, Kaplan-Meier analysis) over 16 years. We also analyzed subgroup proportional recurrence hazard (Cox analysis) of 6 outcome predictors of sex, lipoma type, age, preoperative symptoms, previous surgery, and postoperative cord-sac ratio. These results were compared with an age-matched, lesion-matched series of 116 patients followed for 11 years after partial lipoma resection and with the Parisian series of nonsurgical treatment.

Total resection has a better long-term outcome for asymptomatic lipomas (Pang D et al, 2009)

MANAGEMENT OF LUMBOSACRAL LIPOMAS

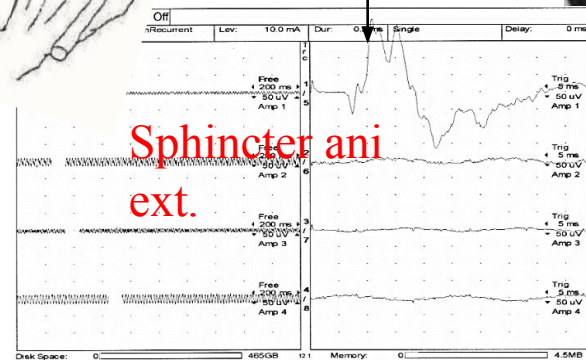
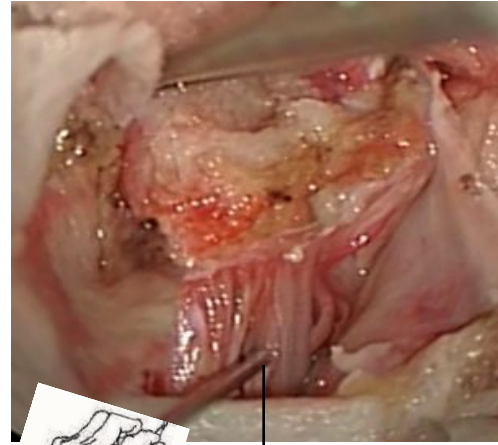
A. PIERRE-KAHN

The degree of removal of the intraspinal lipoma varies, in the literature, from minimal to “total”. There is no doubt that “total” removal in an attempt to reach the fibrotic interface is doable, but carries the intrinsic risk of injuring the posterior columns, provoking severe and durable pain, trophic ulcers or bladder paralysis. For that rea-

how to avoid bladder dysfunction?

TcMEP, SSEP, BCR
often unobtainable in
infants

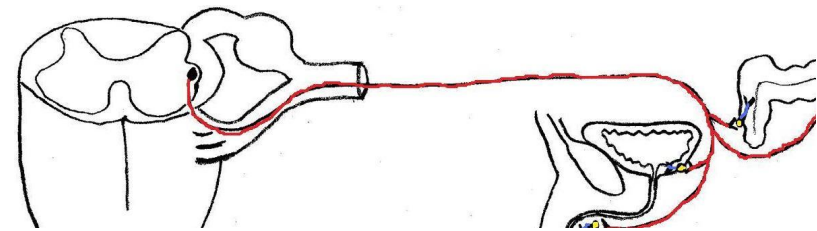
Sacral roots stimulation mapping
does not protect detrusor
function



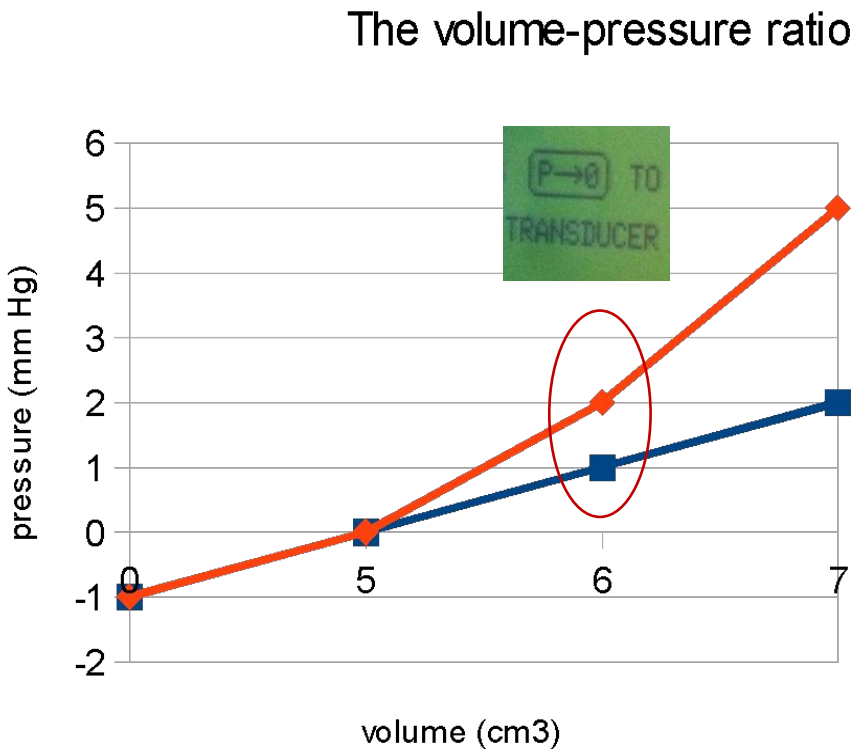
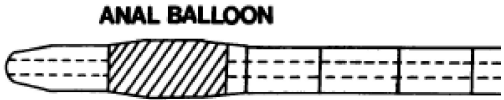
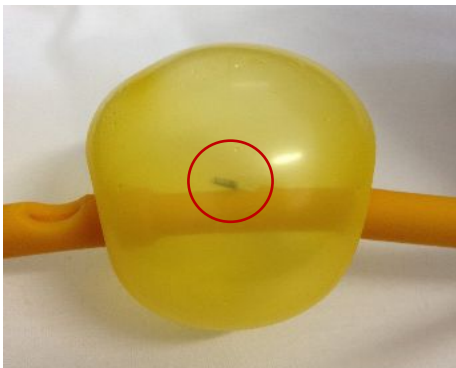
Sphincter ani
ext.



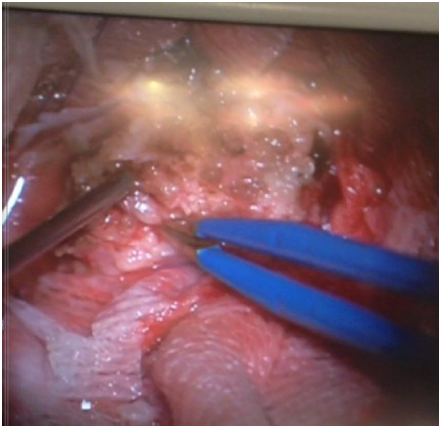
Rectal manometry (n=7)



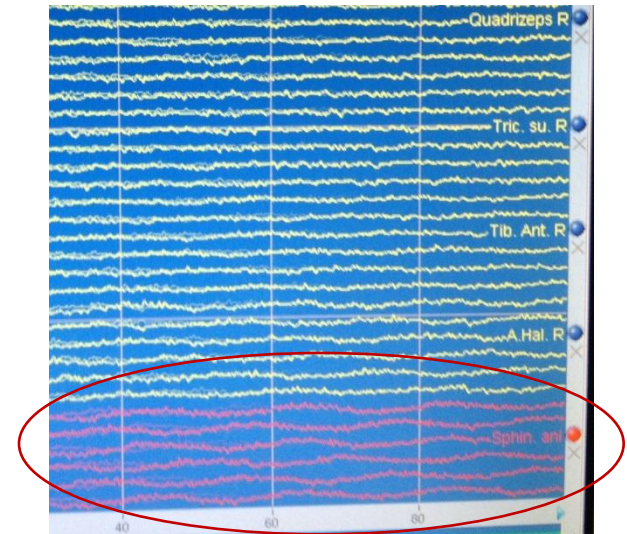
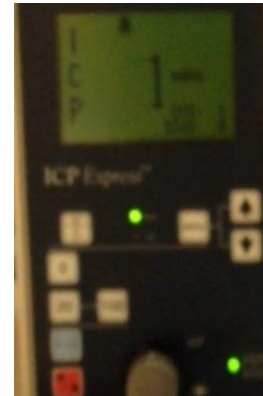
innervation of the bladder and bowel is the same



BIPOLAR COAGULATION

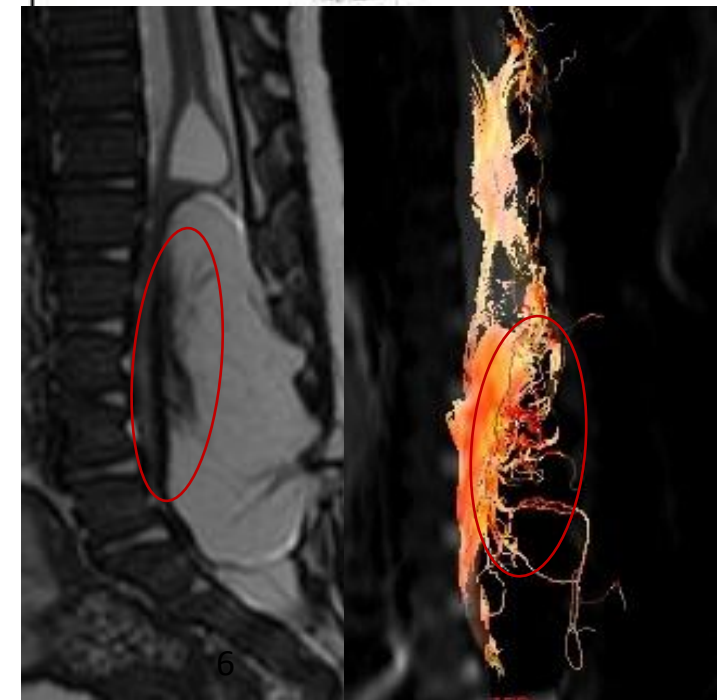
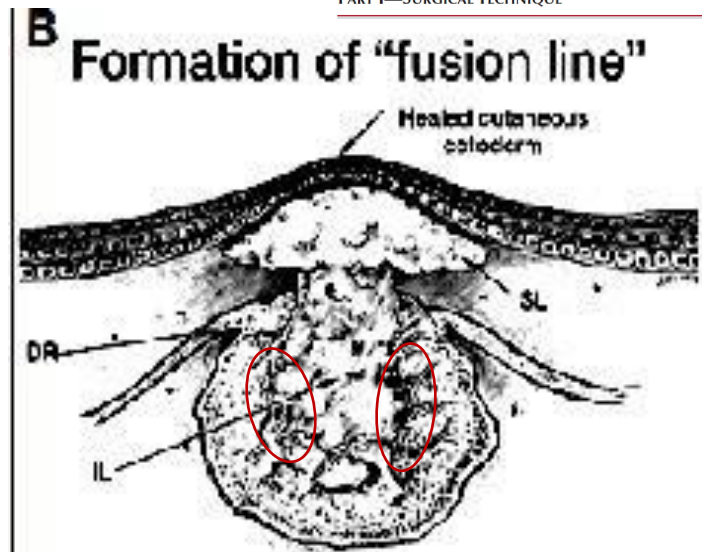


CUSA



The most pronounced pressure changes were observed during the manipulations along the spinal cord-lipoma fusion line

LONG-TERM OUTCOME OF TOTAL AND NEAR-TOTAL RESECTION OF SPINAL CORD LIPOMAS AND RADICAL RECONSTRUCTION OF THE NEURAL PLACODE: PART I—SURGICAL TECHNIQUE



The neural control of micturition

Clare J. Fowler*, Derek Griffiths[†] and William C. de Groat[§]

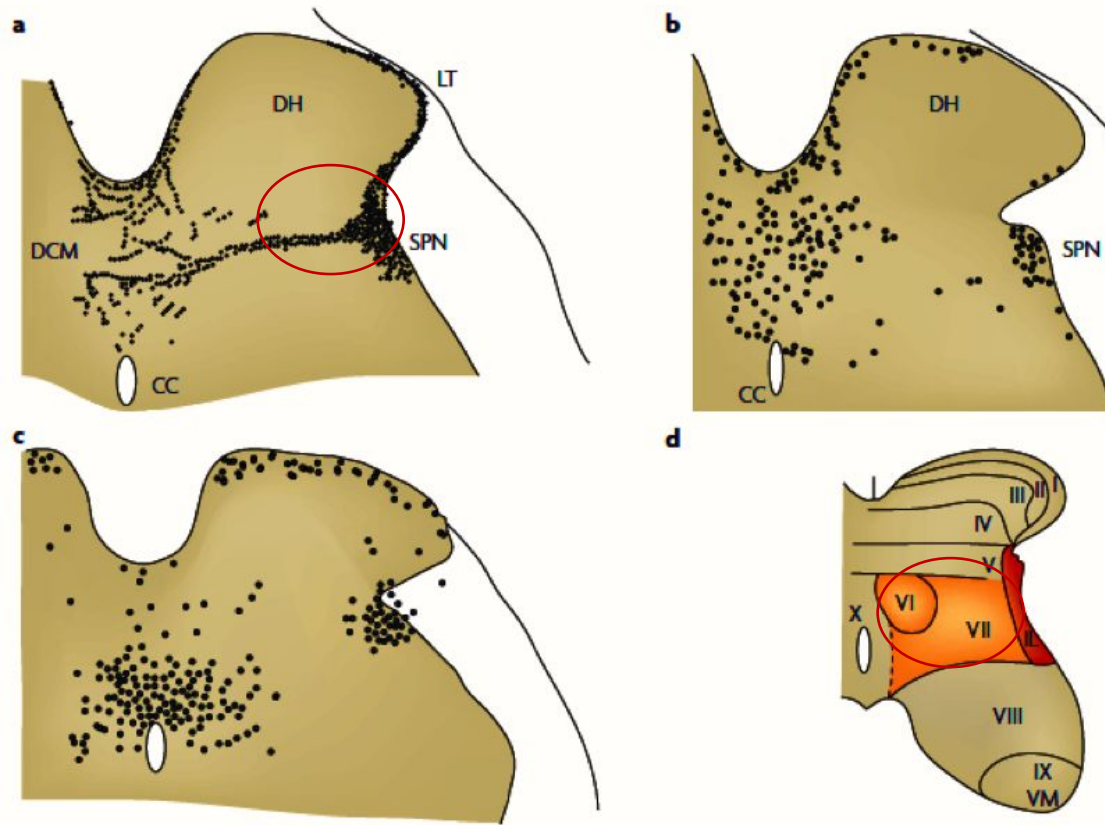


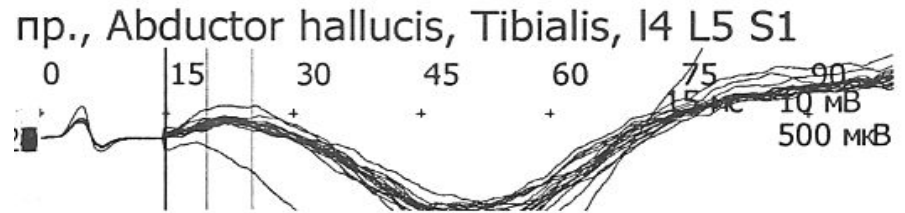
Figure 3 | Primary afferent and spinal interneuronal pathways involved in micturition. a | Primary afferent pathways in the L6 spinal cord of the rat project to regions of the dorsal commissure (DCM), the superficial dorsal horn (DH) and sacral parasympathetic nucleus (SPN) that contain parasympathetic preganglionic neurons. The afferent nerves cc

2 month-old boy (feet paresis)

EMG (L5, S1)

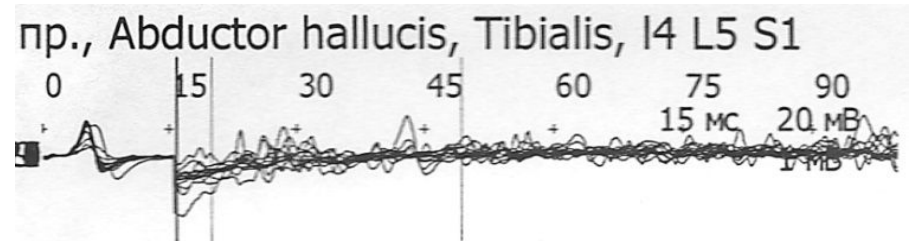
before surgery:

F-waves Blocks: S-70,6%, D-77,8%



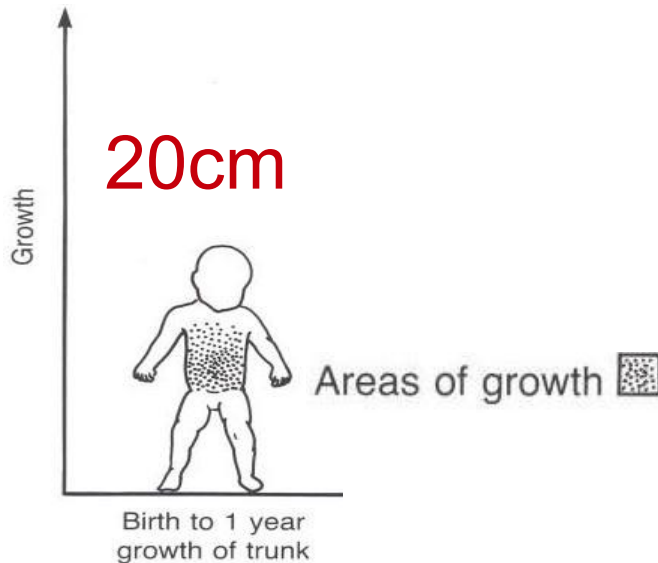
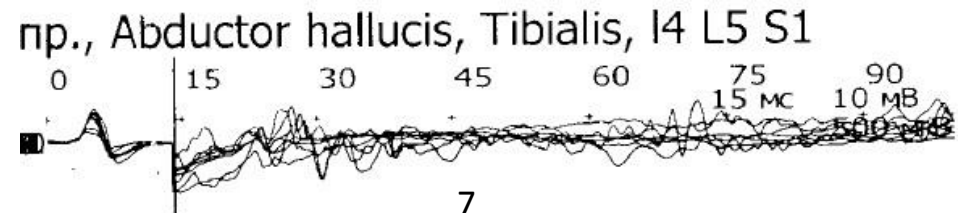
20 days after surgery:

F-waves Blocks: S-14,3%, D-7,7%



14 months after surgery:

F-waves Blocks: S-0%, D-0%



Conclusions:

- ✓ Paresis of the detrusor after lipomyelomeningocele surgery may due to damage of sacral parasympathetic centers;
- ✓ The total lipoma removal may be more dangerous;
- ✓ Rectal manometry may be a way to protect detrusor function.