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Pudendal Nerve
Surgery.
Intraoperative
Electrophysiological
Exploration

- **Clinical and electrophysiological investigation can establish a pudendal nerve damage. With our methodology we may orientate the diagnosis towards an interligamental or a pudendal tunnel entrapment**

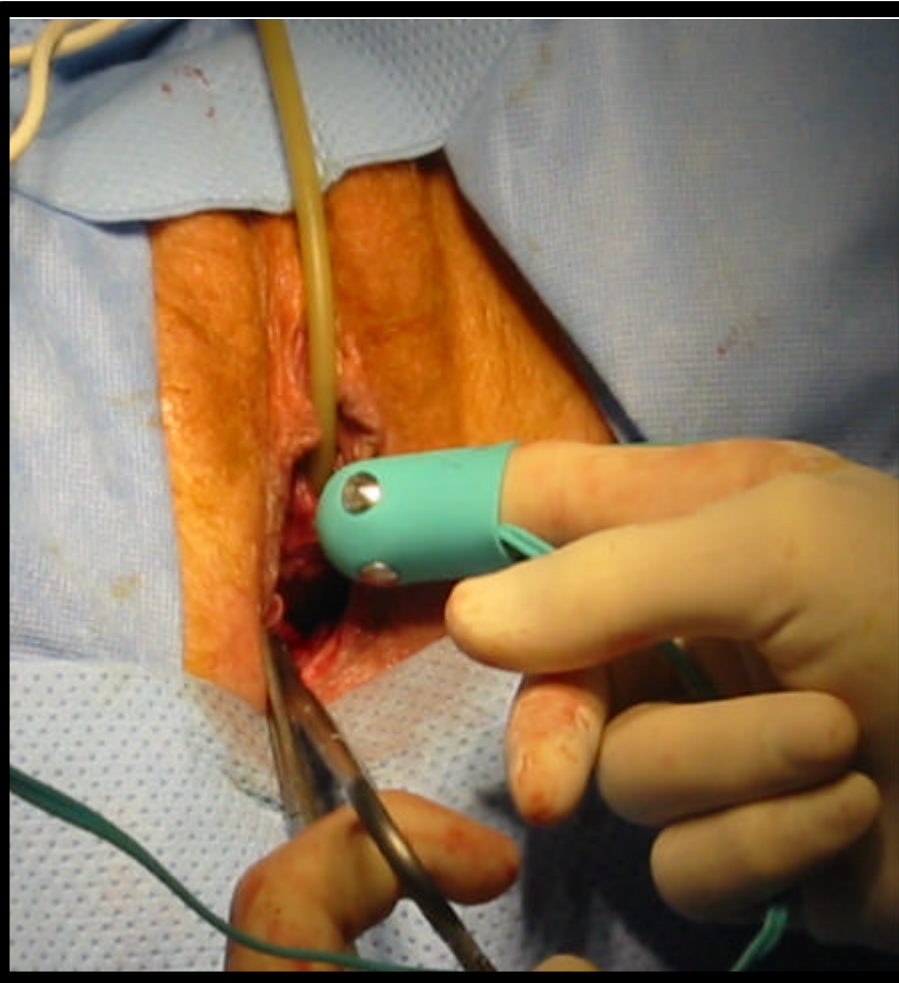
- **This differential diagnosis is possible with the battery of tests we are using: needle EMG, endorectovaginal time conduction, sacral reflex, cerebral SEP**

- **In reality, an intraoperative electrological exploration is more informative. It enables us to localize with accuracy the site of entrapment :
interligamentaral complex,
processus falciformis, pudendal
tunnel**

Methodology

- **Our procedure consists in directly stimulating the nerve with 0,2 ms rectangular pulse and recording the stimulated potential into the anal sphincter**

Stimulating electrode

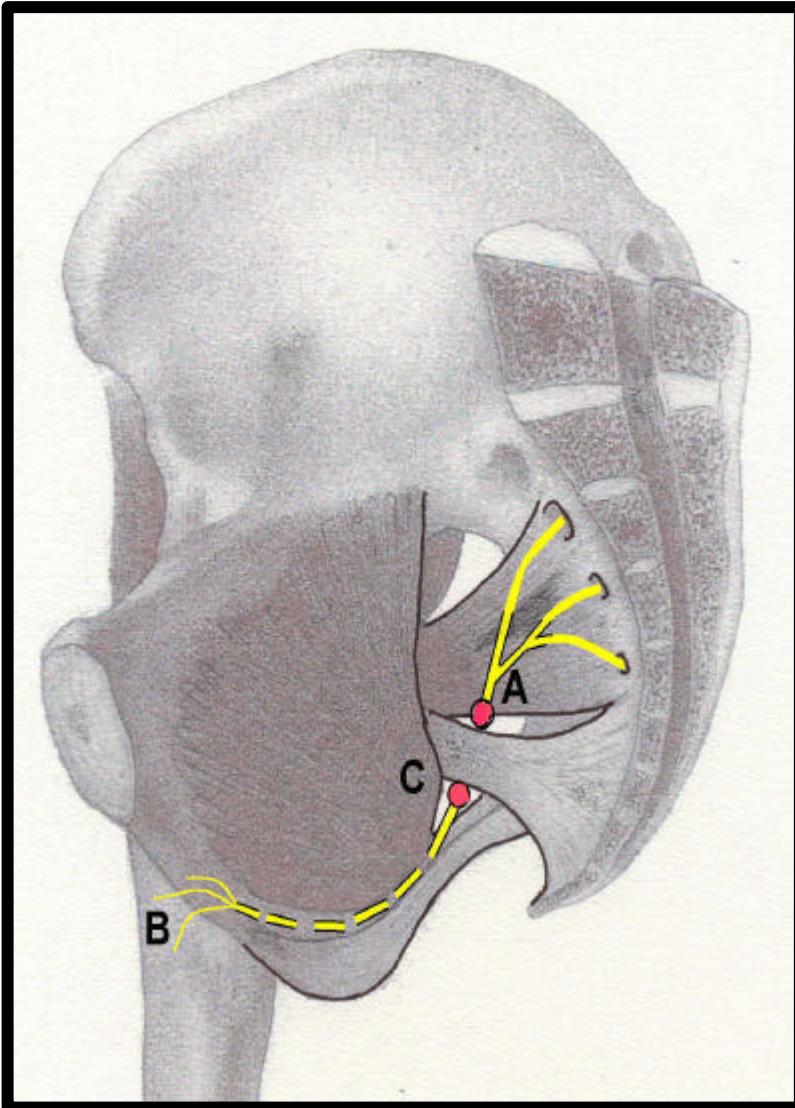


- **Surface electrode which consists of two circular electrodes fixed to the tip of a finger-stall**
- **Digistim Sugar®**

Recording electrode

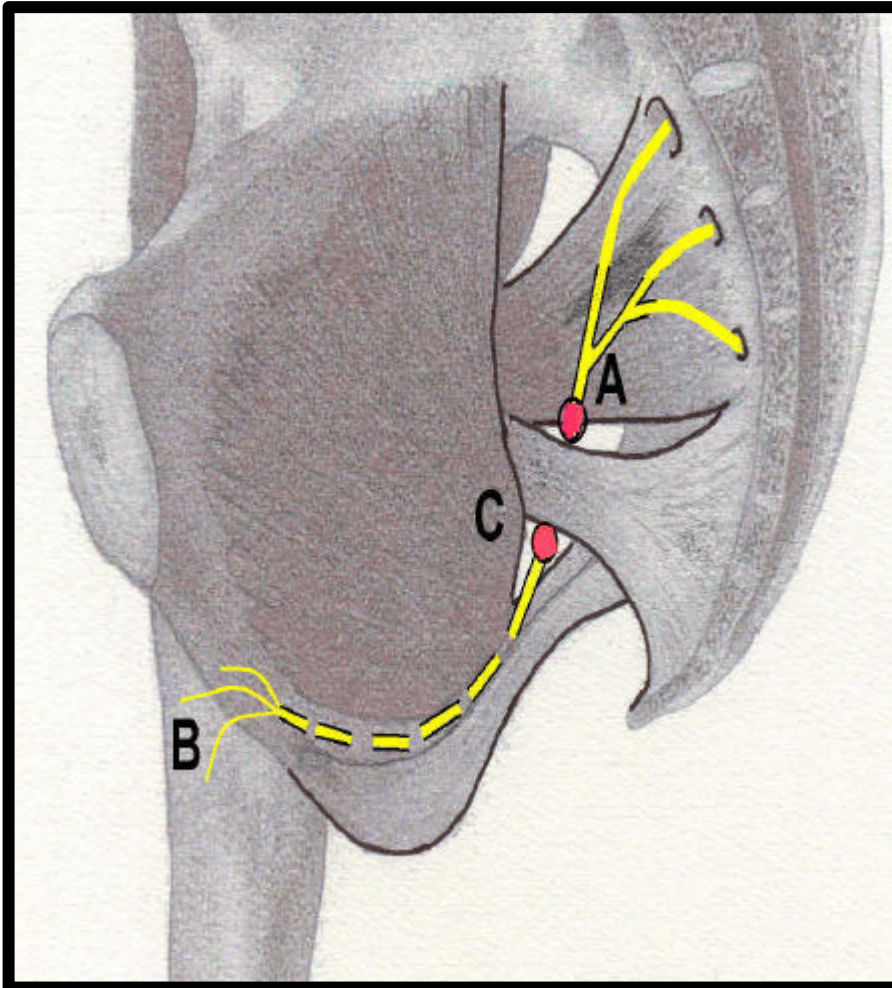
- **Concentric needle electrode inserted into the ventral half of the anal sphincter**

Modus faciendi

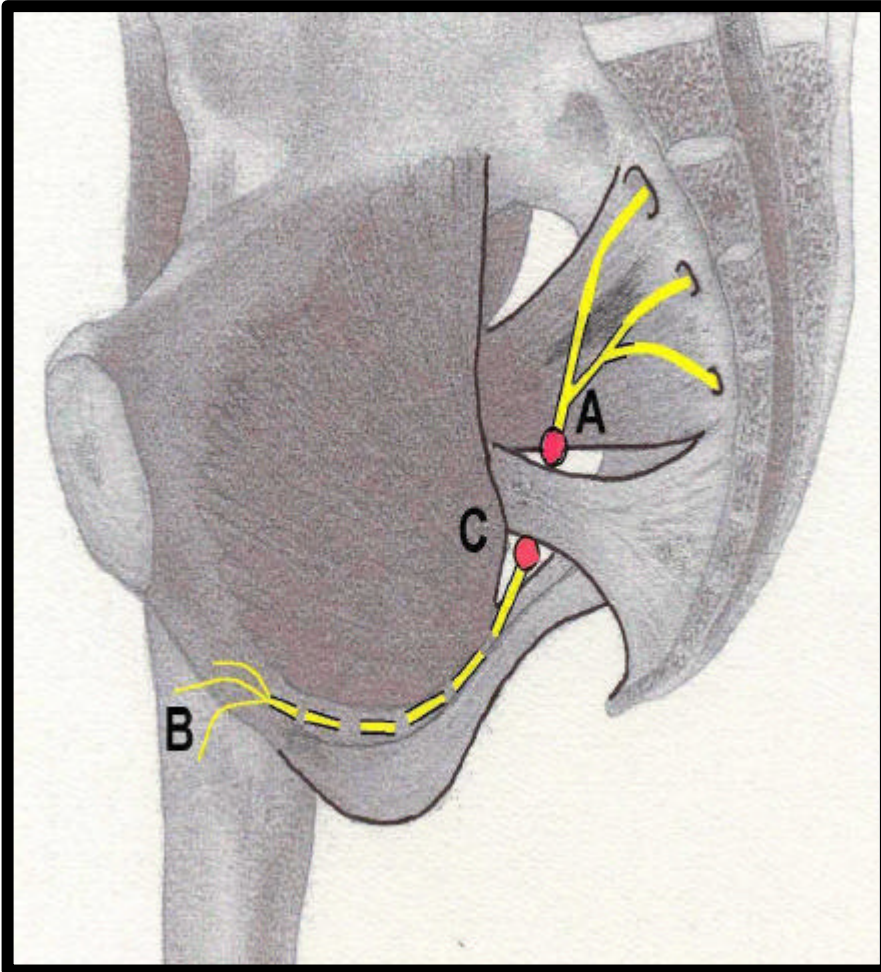


- We directly stimulate the nerve at two separate points (A and C) in the conduction pathway, above and below the sacrospinous ligament

Data analysis

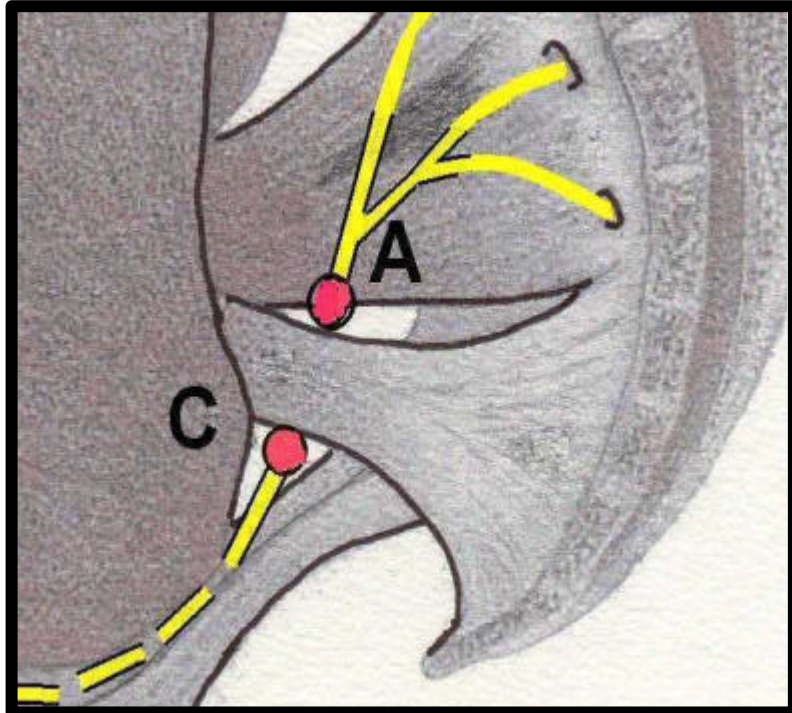


- Stimulation above the sacrospinous ligament is available for measuring the total conduction time (AB) without specifying the site of involvement



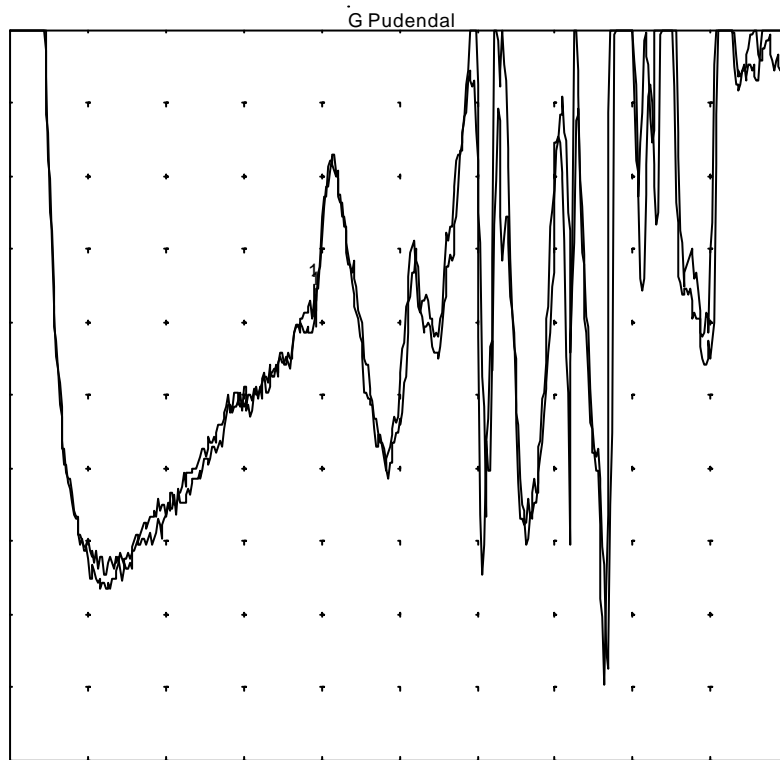
- **Stimulation below the sacrospinous ligament evaluates the conduction time in the terminal part of the nerve (CB) : processus falciformis + pudendal tunnel**

**Distinguishing between these
two levels depends of the
operative evolution**

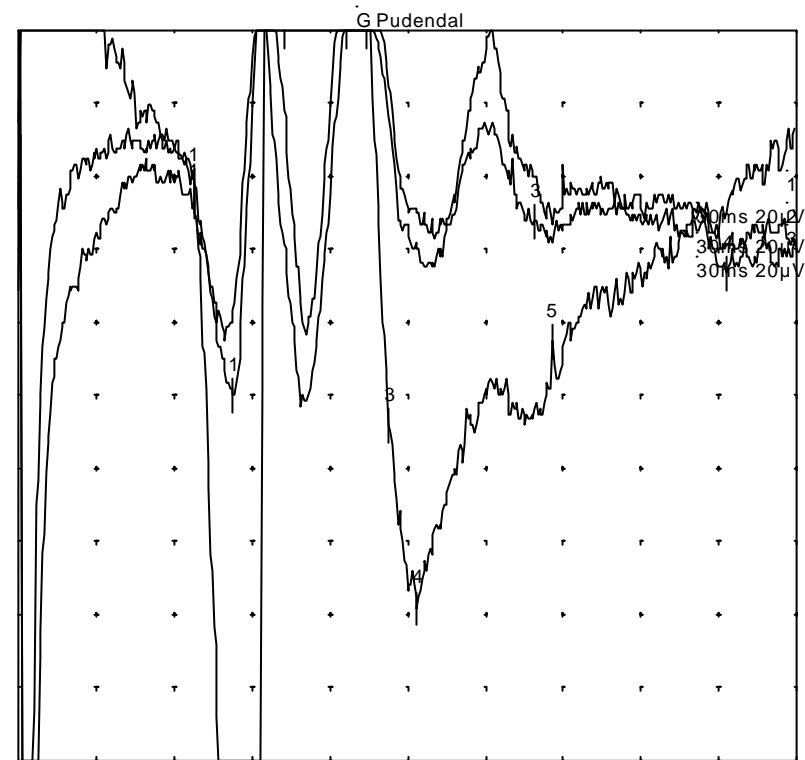


- The difference between these two conduction times ($AB - CB = AC$) evaluates the interligamentary pathway conduction

3 ms/div – 20 μ V/div

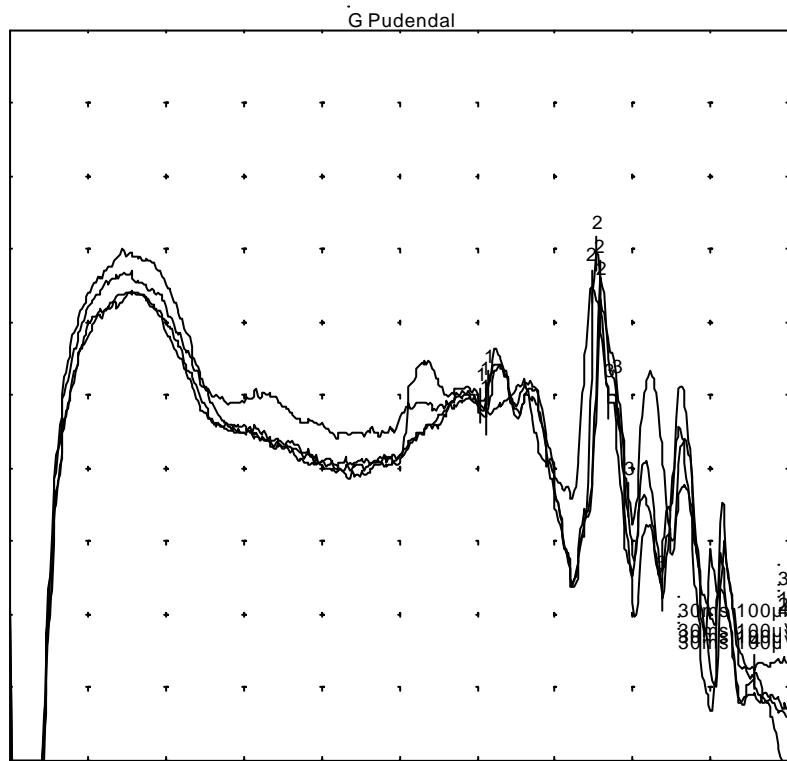


Intraoperative endorectovaginal time conduction
before decompression: 11,30 ms

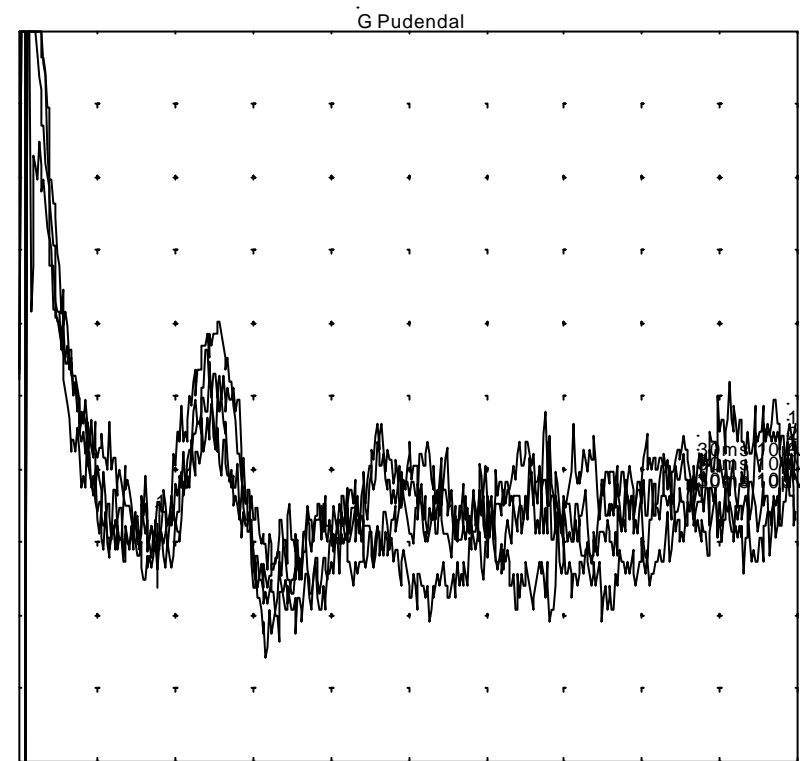


Intraoperative endorectovaginal time conduction
after decompression: 6,50 ms

3 ms/div – 100 μ V/div



Intraoperative endorectovaginal time conduction before decompression: 17,80 ms



Intraoperative endorectovaginal time conduction after decompression: 5,10 ms

**By way of
summary, the main
points in this study
seem to us to be:**

- **Improving the surgical procedures**
- **Informing the surgeon in the successful of the decompression or in the necessity of completing it (end or not of the operation)**
- **Distinguishing between a pudendal tunnel compression and an entrapment at the caudal part of the interligamental complex or inside it**

CONCLUSION

**Intraoperative
electrophysiological
exploration of the pudendal
nerve appears to be an
important and valuable
method for the success of
surgical procedures**