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# Abstract Reproduction Form B-1

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Title (type in CAPITAL LETTERS): COMPARISON OF THE CONTRACTILE RESPONSES TO ELECTRICAL FIELD STIMULATION OF ISOLATED BLADDER STRIPS FROM DIFFERENT AREAS IN MALE AND FEMALE RATS. IN VITRO STUDY.

AIMS OF STUDY

Smooth muscle is an important component of the lower urinary tract as normal voiding is dependent upon the ability to respond appropriately to stimulation. Changes or impairement in the contractile capacity of the smooth muscle of the bladder, as with surgery, may be reflected in the global voiding function.

The present study was undertaken to determine

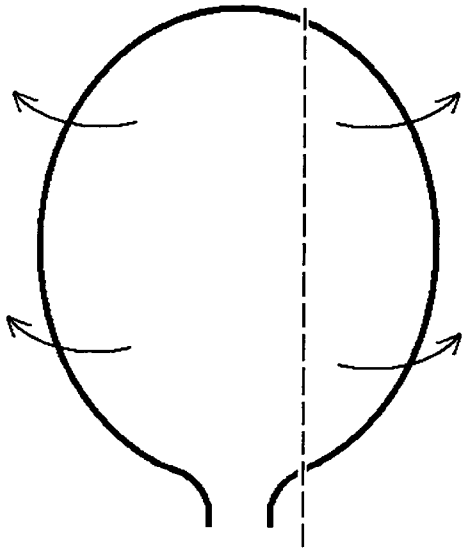
- whether there are any differences in the contractile responses to electrical field stimulation in standardized isolated bladder strips (two ventral vertical strips, one cranial transversal strip and one dorsal oblique strip) and
- whether gender difference has some influence.
- which area of the bladder has to be avoid of traumatising by surgical interventions.

METHODS

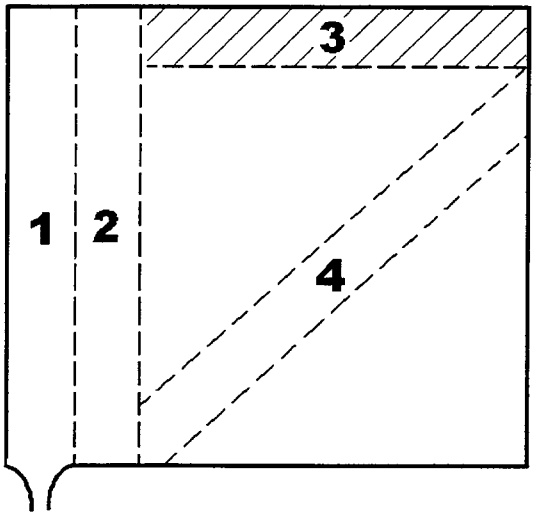
Four isolated bladder strips were dissected free from the bladder body of 9 male and 9 female Wistar rats (fig).

Tied at both ends with noncapillary silk, the strips were mounted in tissue baths with the lower end fixed and the upper part connected, via a light stainless steel rod, to a force transducer (EMKA force displacement transducer). Strips underwent stress relaxation under a load of 2.5 g for 30 minutes before any measurement was done. Electrical field stimulation was given via platinum electrodes on both sides of the strip (biphasic rectangular current of 400 µsec, frequency of 33.0 Hz, amplitude ranging from 400 to 800 mA).

fig.



A)




B)

# Abstract Reproduction Form B-2

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RESULTS

Peak contractile responses were reached at 720 mA.

Statistical significant difference was noticed between the ventral, cranial and dorsal isolated bladder strips.

| location | median | 25% | 75% |
|---|---|---|---|
| ventral 1 | 0.811 g | 0.480 | 1.239 |
| ventral 2 | 0.908 g | 0.597 | 1.498 |
| cranial | 0.338 g | 0.133 | 0.552 |
| dorsal | 1.526 g | 0.542 | 1.906 |

| comparisons | p | |
|---|---|---|
| ventral 1 versus ventral 2 | 0.4732 | NS |
| ventral 1 versus cranial | 0.0090 | SS |
| ventral 1 versus dorsal | 0.0382 | SS |
| ventral 2 versus cranial | 0.0001 | SS |
| ventral 2 versus dorsal | 0.2354 | NS |
| cranial versus dorsal | 0.0001 | SS |

Best contractile responses were noticed in the dorsal isolated bladder strips, the worst responses in the cranial pole strips.

No statistical significant difference was noticed between male and female isolated bladder strips ($p = 0.3173$).

CONCLUSION

Eeach area of the urinary bladder in rats has a different contractile response to electrical field stimulation. Contractile respons at the cranial pole is significant lower in comparison with the other bladder areas. Surgical interventions would seem best performed through the cranial pole to save the bladder musculature of the ventral and dorsal region and thus to avoid traumatising the strongest part of the bladder wall and avoid voiding dysfunction. No gender difference was noticed.