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Title: TISSUE REACTION COMPARISON BETWEEN TVT (TENSION-FREE VAGINAL TAPE)
AND PORCINE SOFT TISSUE FASCIA GRAFTS ON RABBIT URINARY BLADDER

Aims of Study:

The commercial availability of various sling material has considerably simplified sling procedures for the treatment of urinary incontinence. We aim to evaluate the histological tissue reaction of urinary bladder to tension free vaginal tape (TVT) when applied in close contact as in sling procedures, and compare it to porcine fascia/soft tissue grafts (STG) as well as controls.

Methods:

30 Female New Zealand rabbits were randomized to 3 groups. Group A (TVT) 12 animals, Group B (STG) 12 animals & Group C (surgical control) 6 animals. With anesthesia and using an aseptic technique, a laparatomy was performed. The bladder was approached at its dome were a piece of TVT or STG 0.5cm x 1 cm is fixed in direct contact to the bladder wall. The Control group simply had manipulation of the bladder with no material applied. At 6 weeks interval half the number of animals in each group was sacrificed, the other half was sacrificed at 1 2weeks. The urinary bladder was collected and examined histologically by a uropathologist.

Results:

The grafts in both groups were characterized by dense foreign body type reaction and mostly loosely attached to the bladder wall by a thin layer of fibrovascular tissue. More importantly the bladder wall reaction showed no inflammation in all 12 animals in the TVT group with 1 animal having grade I fibrosis and another showing grade 11 fibrosis. The STG group revealed a severe transmural inflammation in 1 animal. 1/12 animals had grade I fibrosis and 2/12 had grade 11 fibrosis. The controls as expected had no bladder wall reaction.

	Bladder Inflarnrnation	Subserosal Fibrosis (Grade 0-II)			Bladder Wall Fibrosis (Grade 0-III)			
		0		II	0	I	II	III
TVT No. of animals	0/12	0/12	8/12	4/12	10/12	1/12	1/12	0/12
STG No.of animals	1/12*	2/12	4/12	3/12	9/12	1/12	2/12	0/12
Controls No. of	0/6	0/6	0/6	0/6	0/6	0/6	0/6	0/6

animals				

Conclusion:

This is a descriptive analysis of the type of reactions elicited on the urinary bladder by these grafts.

Although TVT had a lower number and severity of adverse reaction, no statistical conclusions can be drawn. Both materials appear to be safe.

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