

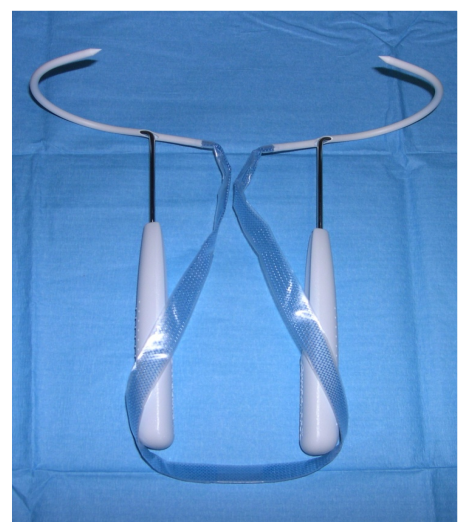
# Long-term outcome of the transobturator vaginal tape inside out (TVT-O) for the treatment of urethral sphincter mechanism incompetence in female dogs

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## Introduction

Urethral sphincter mechanism incompetence (USMI) is the most common cause of acquired urinary incontinence in female dogs. Surgery is recommended if the animal does not respond to medical treatment or becomes refractory, if side effects develop or if owners are reluctant to administer long-term medication. Stress urinary incontinence in women is mainly treated surgically by vaginal placement of suburethral slings, including the transobturator vaginal tape inside out. This technique was reported in female dogs in 2010 and short-term results were promising. Six of seven dogs included in a first study were continent at a mean follow up time of 11.3 months.

The **objective** of the present study was to evaluate the long-term outcome of the TVT-O in female dogs.



## Material and methods

TVT-O tape was inserted in 12 incontinent bitches diagnosed with USMI. Follow-up information was evaluated by a telephone questionnaire at a minimum of 28 months after surgery, and a continence score was attributed.



### Surgical procedure:

The dog is positioned in dorsal recumbency. A median episiotomy is performed, and a Foley catheter is inserted into the bladder.

A 1 cm median incision of the ventral vaginal wall is started 1 cm proximal to the urethral meatus. The TVT-O passer is introduced in the vaginal incision on the right side of the urethra.

Bone contact with the dorsal part of the ischium is maintained until reaching the caudal border of the obturator foramen. The handle of the helical passer is then rotated until the pointed tip of the tube appears under the skin. A small skin incision is then performed to facilitate exit of the tube. The same technique is applied to the left side, resulting in position of the tape dorsal to the urethra and ventral to the vagina. The tape is then straightened by exerting a slight traction on its 2 ends. The tape is left unfixed in the subcutaneous tissue.

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Follow-up	1 year	Long-term (median : 85 months)
N (dogs)	12	10
Continence without medical treatment	7 (58%)	4 (40%)
Continence with medical treatment	3 (fully continent) 2 (mildly incontinent)	4 (fully continent) 2 (mildly incontinent)

**Median recurrence time: 2 months [1-20]**

No long term complications were encountered.

## Discussion

At long-term follow-up, TVT-O alone was effective in maintaining continence in 40% of the dogs. Those results are less encouraging than the initially reported short-term results in which 6 out of 7 bitches were continent postoperatively. However, additional postoperative medical treatment was often effective. The results obtained in dogs are less encouraging than those observed in women (92% objectively cured at the 10 year evaluation).

The **exact mechanism of action** of the tape is not completely understood. One hypothesis would be that the tape has an obstructive effect, which causes an increased urethral resistance locally. Another hypothesis would be that the tape restores some structural support of the urethra which could be lacking in dogs affected with USMI, similar to what happens in women.

The **reason for recurrence** is also unclear. The tape may loose some tension with time due to its elasticity. Another reason for the recurrence could be the disappearance of the initial inflammatory reaction which may have locally increased urethral resistance temporarily. Some dogs indeed recurred very rapidly after surgery.

The **major limitation** of the present study is the low number of cases. A higher number of cases would obviously be required to conclude on the efficacy of the TVT-O, especially given the potential learning curve of the procedure.

## Results

TVT-O alone was successful in maintaining long term continence in 40% of the dogs. Additional postoperative medical treatment was effective in restoring continence in another 40 % of dogs.

TVT-O provides an alternative treatment of USMI in female dogs, that is safe and less invasive than standard surgical techniques.