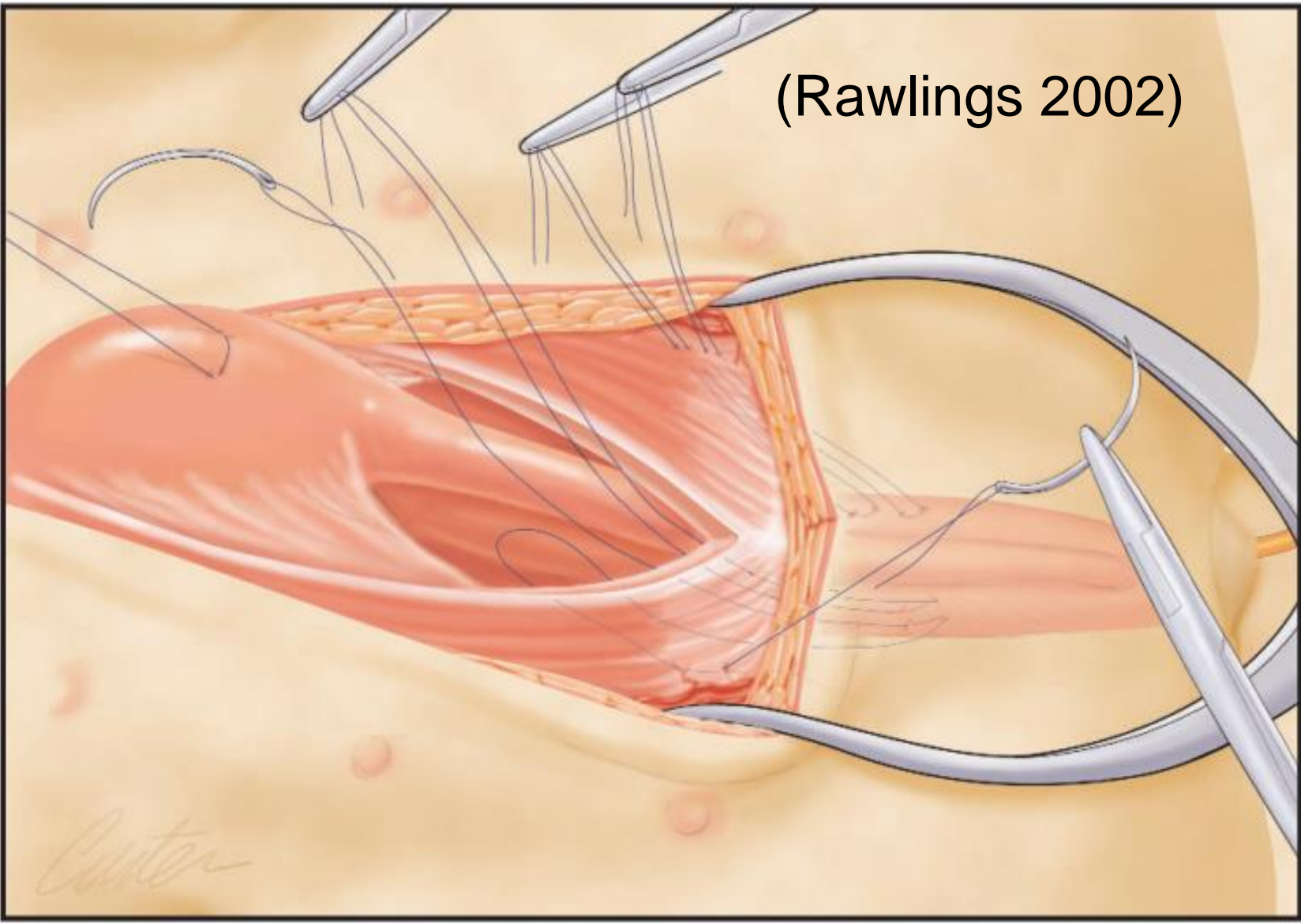
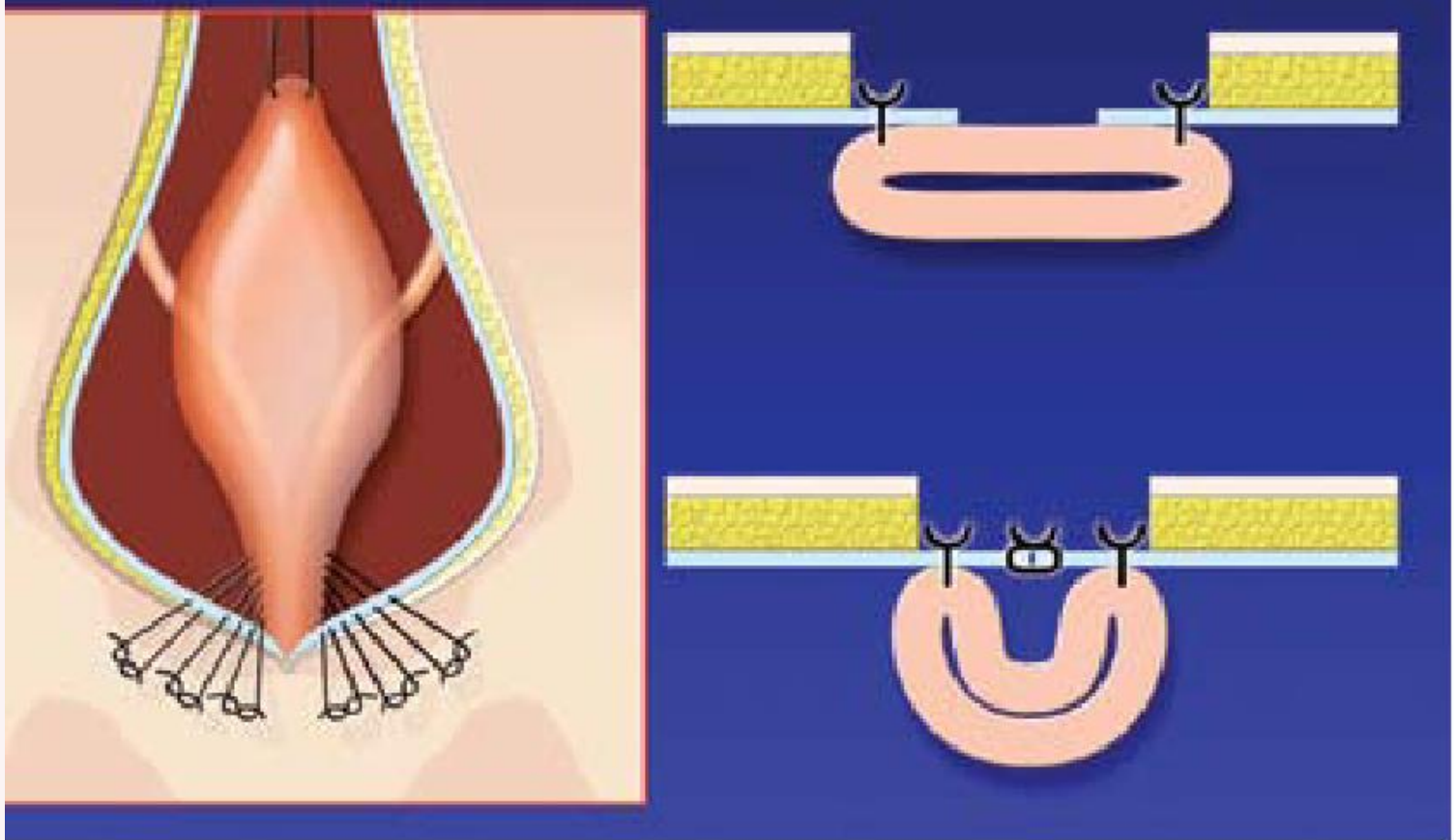

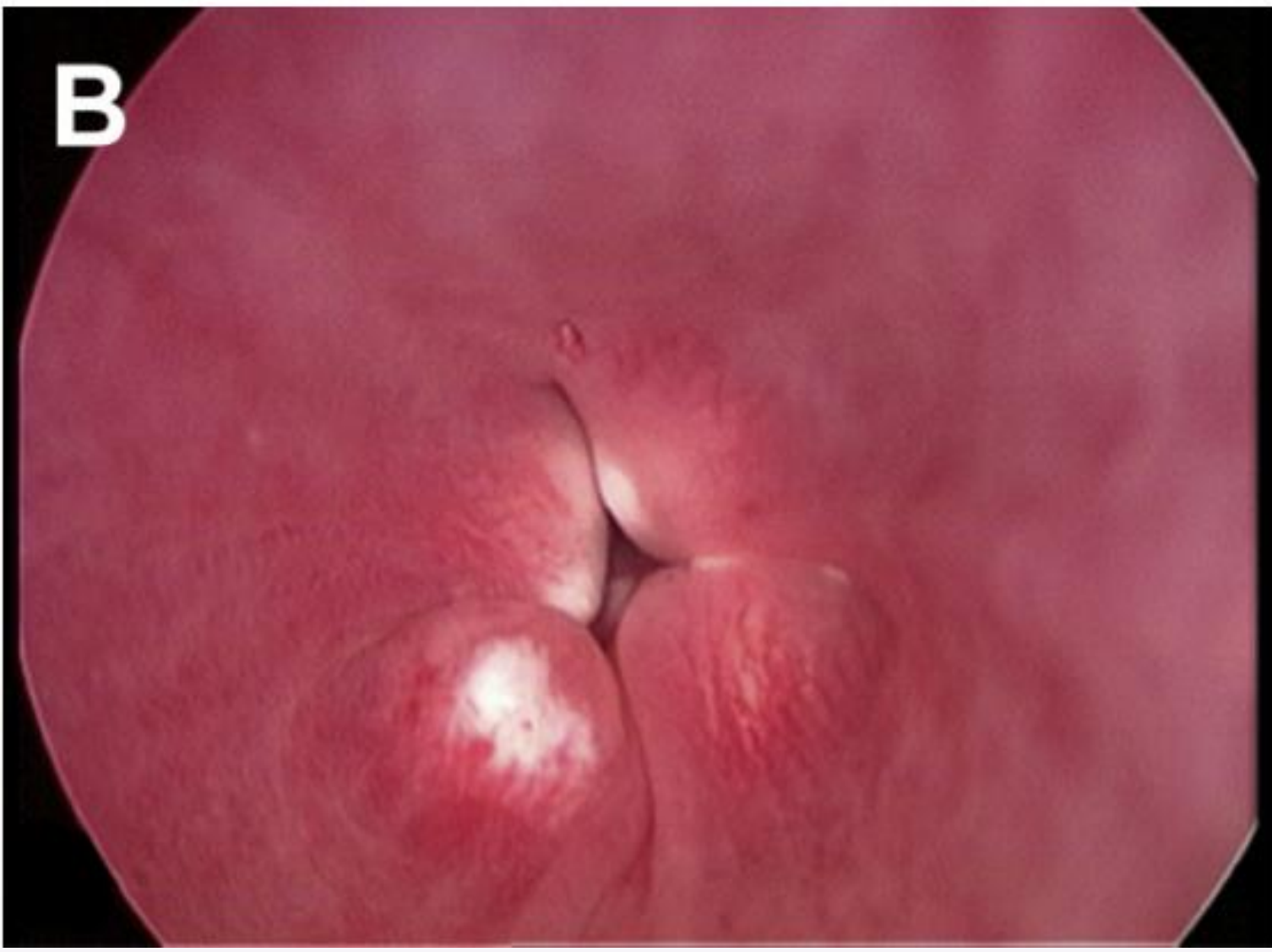
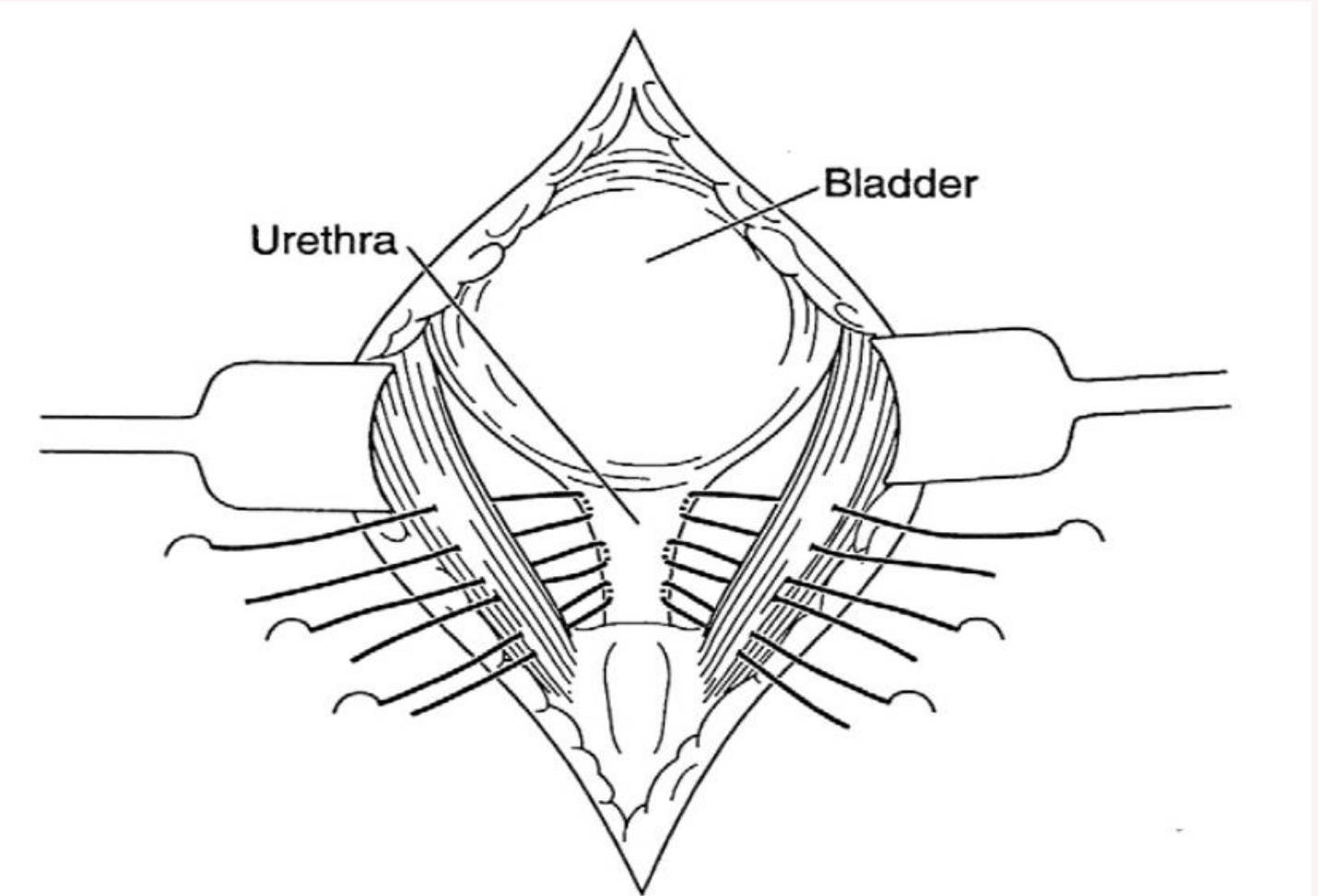
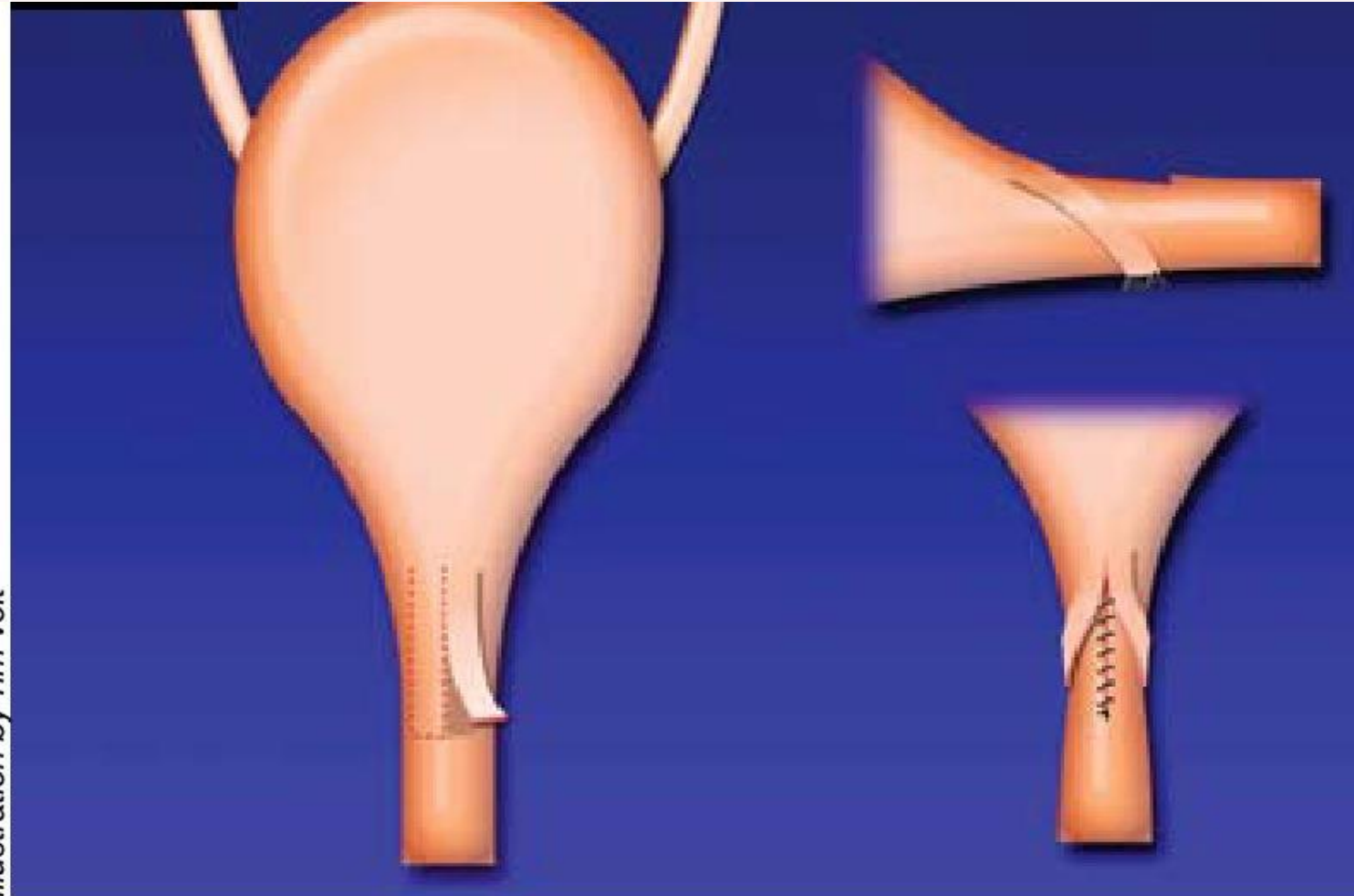
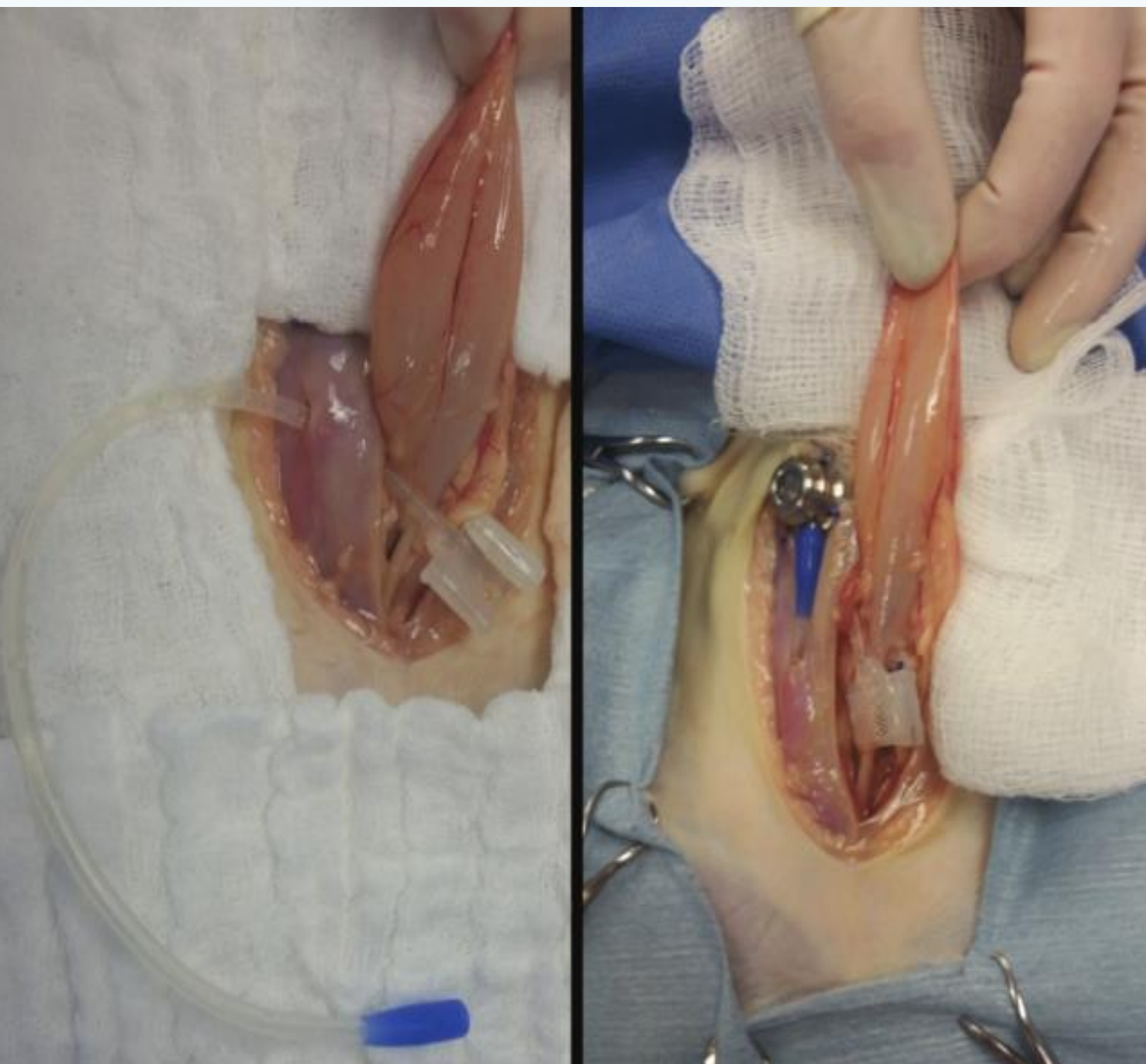
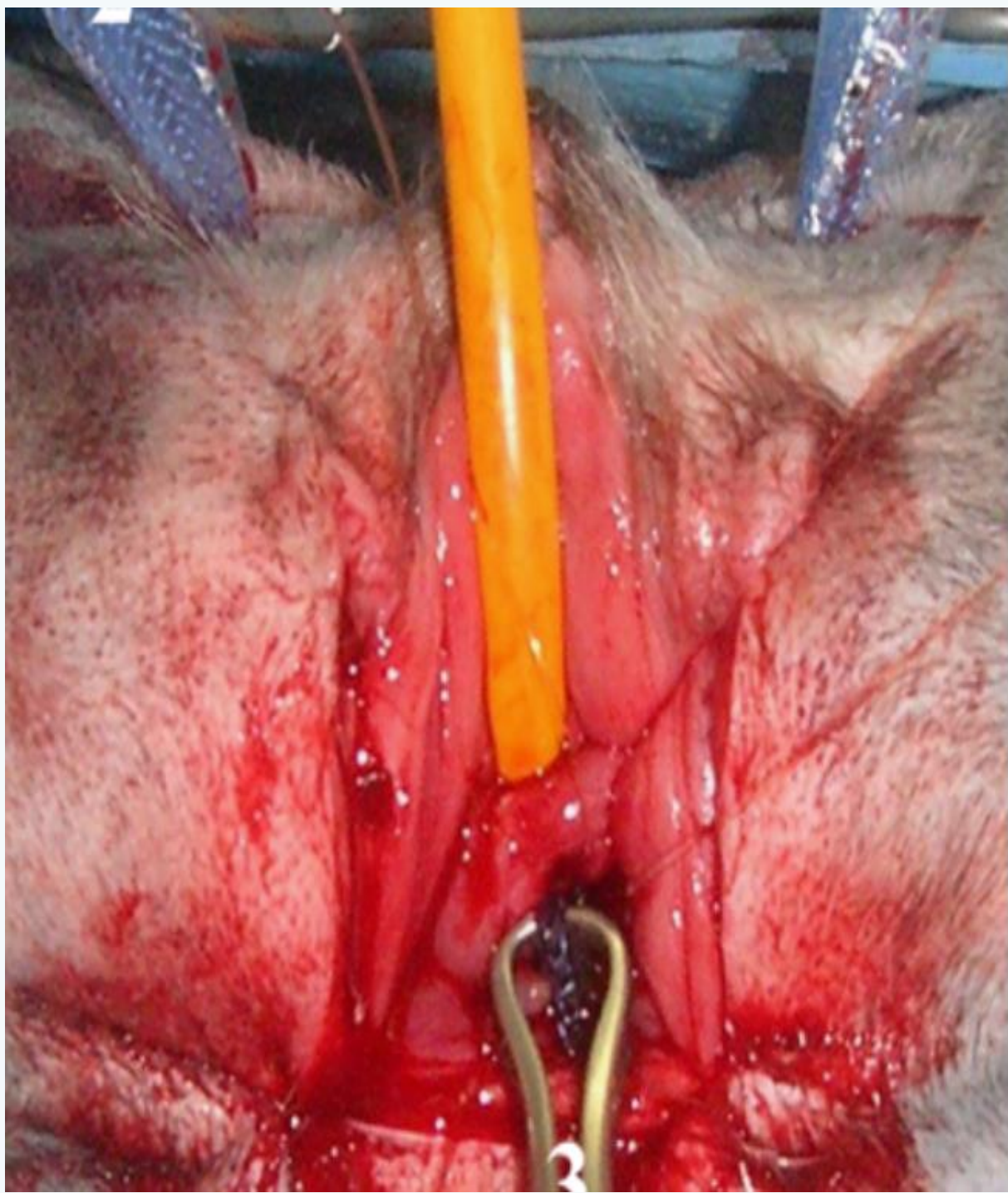


Alexander Paul Sablotni Aguilera - Final Project in Veterinary Medicine Degree 2017 – Autonomous University of Barcelona

Introduction	Treatment						
Urinary incontinence (UI) occurs when the voluntary control of the bladder and urethral sphincters disappears, resulting in a constant or frequent involuntary loss of urine during storage. In adult bitches, the main cause (in 85% of the cases) is the urethral sphincter mechanism incompetence (USMI), acquired especially post neutering, and ectopic ureter (UE). Others less frequent would be detrusor instability, neurogenic incompetence, intersexuality, bladder neoplasia, ureterovaginal fistula, vaginal neoplasia and vesiculo-vaginal fistula. There is a lot of controversy about the pathophysiology but sure is that there are multiple factors that can predispose to acquired UI in adult bitches, such as adult weight, age of neutering, and the breeds (medium to large) among others. The first episodes of acquired UI may appear between 2 and 5 years post-sterilize	Medical <ol style="list-style-type: none">Phenylpropanolamine hydrochlorideDiethylstilbestrol Surgical techniques <table><tr><td>1.</td><td>Realization of pexias</td></tr><tr><td>2.</td><td>Injection of substances</td></tr><tr><td>3.</td><td>Placement of devices</td></tr></table>	1.	Realization of pexias	2.	Injection of substances	3.	Placement of devices
1.	Realization of pexias						
2.	Injection of substances						
3.	Placement of devices						
Objectives							
<ul style="list-style-type: none">Define the surgical options for the treatment of acquired UI in adult bitches.Compare the success rate of each surgical techniques.Determine the advantages and disadvantages of each surgical techniques.							

Colposuspension	Urethropexy	USMI before injection	After injection
 (Rawlings 2002)	 (McLoughlin y Chew 2009)	 (Berent 2016)	 (Berent 2016)

Cystourethropexy	Uretroplasty
 (Massat et al., 1993)	 (McLoughlin y Chew 2009)

Artificial urethral sphincter	Vaginal transobturator tape
 (Wilson 2016)	 (Claeys et al. 2010)

Conclusions
<ol style="list-style-type: none">Among the existing surgical techniques for the treatment of acquired UI in adult bitches, colposuspension has been the most used in history. However, performed as the only technique, its success rate only slightly exceeds 50%.Although there are few comparative studies at present, urethropexy combined with colposuspension may be considered a good surgical protocol, since it has been shown to increase the success rate up to 70%.Regarding the most innovative techniques, both periurethral collagen injection and AUS placement, provide success rates similar to the combination of colposuspension and urethropexy, but are less invasive and offer better postoperative techniques. The main problem is the economic cost.TVT can be considered a good alternative to previous techniques, since in addition to demonstrating equal or higher success rates, it is an economical and faster surgical technique to do.The main drawback of all surgical techniques for the treatment of acquired UI is its poor long-term efficacy.

Surgical technique	Paper		Data		
	Author	Year	nº of cases	Postoperative success rate (%)	Average follow-up period (months)
Colposuspension	Holt et al.	1990	150	53 (excellent) 37 (improved)	33,6
	Marchevsky et al.	1999	60	40 (excellent) 42 (improved with medicine)	-
	Rawlings et al.	2001	23	55 (excellent)	7
Urethropexy	R. White	2001	100	56 (excellent) 27 (improved)	35,4 40,1
Cystourethropexy	Massat et al.	1993	10	20 (excellent) 40 (improved)	-
Uretroplasty	Bushby and Hanks	1980	1	100%	1,5
Urethropexi & colposuspension	Martinoli et al.	2014	30	70%	39,5
Colposuspension & uretroplasty	Muir et al.	1994	5	40% (excellent) 60% (recurred)	-
Teflon	Arnold et al.	1989	22	77% (excellent)	-
Glutaraldehyde cross-linked collagen	Arnold et al.	1996	32	53% (excellent with surgery only)	22
Collagen	Barth et al.	2005	40	68% (injection) 18% (injection+ medicine)	17
Bovine cross-linked collagen	Byron et al.	2011	31	+/- 65%	16,4
Artificial urethral sphincter	Adin et al.	2004	6 (cadaver)	100%*	*tested to see how the device worked.
	Rose et al.	2009	4	100%	26 - 30
	P. Delisser et al.	2012	11	36,4%	13,73
	Currao et al.	2013	18	56% (excellent) 67% (improved)	32
	Reeves et al.	2013	27 (18 USMI)	92,50% (excellent)	12,5
Vaginal transobturator tape	Nickel et al.	1998	26	25% (7 with Colpo.) 25% (6 without Colpo.)	19
	Claeys et al.	2010	7	87,50%	11,3
	Deschamps and Roux	2015	12	92%	41