

## Introduction

- There is increasing scrutiny on healthcare costs and the need to evaluate surgical interventions in terms of both efficacy and cost.
- A recent American Urological Association update also emphasized the need for the urology community to embrace and further understand the role of economic analysis in urological practice<sup>1</sup>.
- The number of procedures to address stress urinary incontinence (SUI) has risen steadily over the past decade.
- According to US claims data, there is a 13.6% cumulative risk of undergoing a procedure for SUI<sup>2</sup>.
- In the field of Female Pelvic Medicine and Reconstructive Surgery (FPMRS), the cost-effectiveness (CE) of surgical procedures used to correct SUI now represents a major focus.
- The mid-urethral sling and the Burch colposuspension procedures have received the most attention in regards to CE.
- Since the FDA notifications in 2008 and in 2011 cautioning the use of synthetic materials for the repair of pelvic organ prolapse, the surgical treatment of SUI has been under more scrutiny.<sup>3</sup>
- In our center, we have studied for over 15 years a non-mesh related procedure for the treatment of SUI associated with anterior vaginal wall mobility called the anterior vaginal wall suspension (AVWS), a procedure derived from the needle suspension procedures pioneered by Dr. Raz.<sup>4</sup>

## Study Goal

- To investigate the cost effectiveness of the AVWS and to compare it to published analysis on tension free vaginal tape (TVT), trans-obturator tape(TOT), and the Burch colposuspension (BC) procedure.

## Materials and Methods

- The cost of AVWS for women undergoing AVWS alone (with no associated procedure) was analyzed from a prospective long-term database
- Based on existing literature offering recommendations for CE analysis<sup>5,6</sup> we reviewed the cost of the AVWS performed at a single tertiary institution by one surgeon with FPMRS training.
- All women were treated for SUI with various degrees of associated anterior compartment prolapse.
- The AVWS procedure has been described in detail elsewhere. See Figure 1 and 2.
- Included were complete cost data provided by our institution from Medicare and payers with private insurance. One charity case was excluded, as well as women undergoing concurrent vaginal mesh or mid-urethral sling removal (3) or hysterectomy (4).

- The TVT, TOT, and BC procedures were chosen as cost comparators because of the similarity of indications.
- Costs included: operating room, medical and surgical supplies, pharmacy, anesthesia supplies, professional fees, and room and bed.
- Professional fees for the surgeon and anesthesiologist were obtained Medicare Physician's Fee for service schedule 2013
- All costs were reported in 2014 U.S. Dollars. An annual discount rate of 3% was used to convert costs to 2014 dollars.

Table 1 A. Wilcoxon Rank Sum Test for Comparison of Cost by Fiscal Year and Payer Type

	Fiscal Year			Payer Type		
	2012 (n = 23)	2013 (n = 11)	p	Medicare (n = 18)	Payer Mix (n = 16)	p
Anesthesia	385.17	488.93	0.0049	443.18	404.18	0.7842
Medical and Surgical Supplies	7.23	10.56	0.2836	10.56	7.23	0.9582
Operating Room	2161.42	2469.66	0.0342	2275.43	2226.43	0.2850
Pharmacy	235.67	180.23	0.7425	152.23	258.17	0.0414
Respiratory	48.94	59.71	0.2589	57.42	51.46	0.6795
Room and bed	556.91	595.90	0.0002	556.91	556.91	0.4899
<b>Total</b>	<b>3431.80</b>	<b>4028.54</b>	<b>0.0865</b>	<b>3576.99</b>	<b>3772.41</b>	<b>0.2047</b>

All values reported as medians. With 3% inflation adjustment

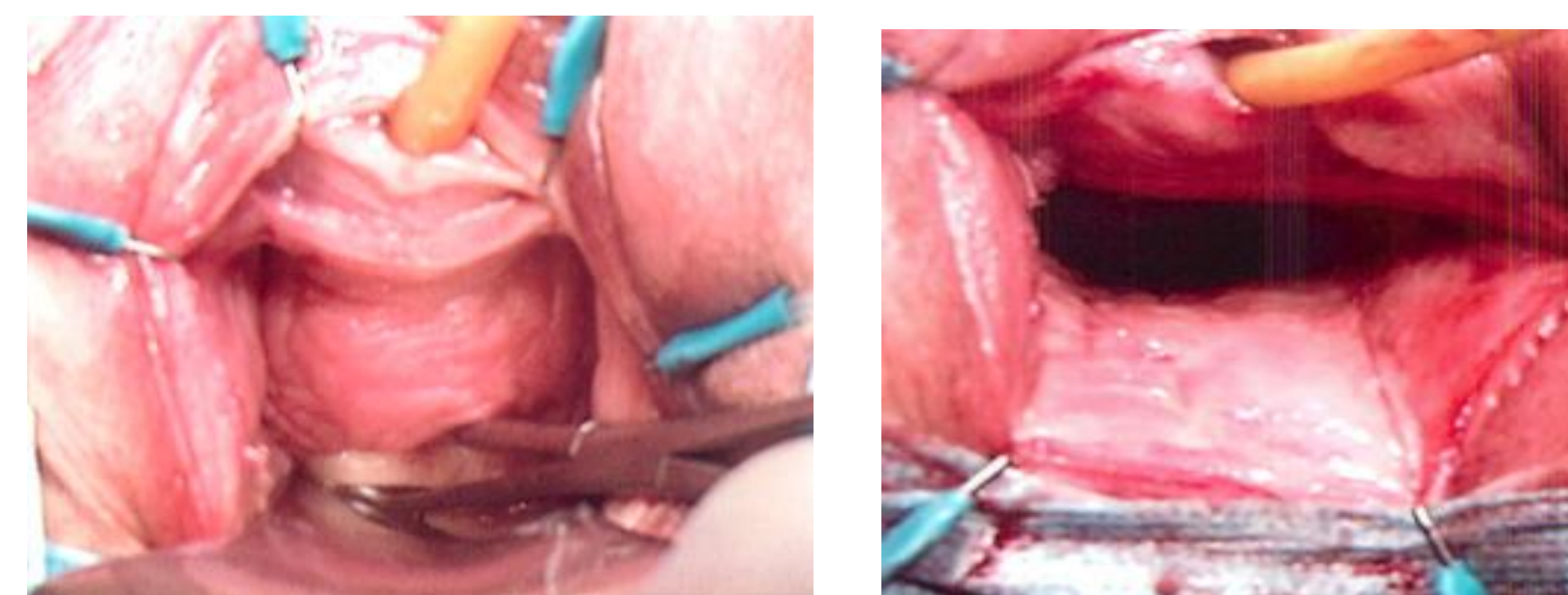


Figure 1: Intraoperative views of: A) Moderate cystocele prior to AVWS procedure B) Final anatomic results after AVWS.

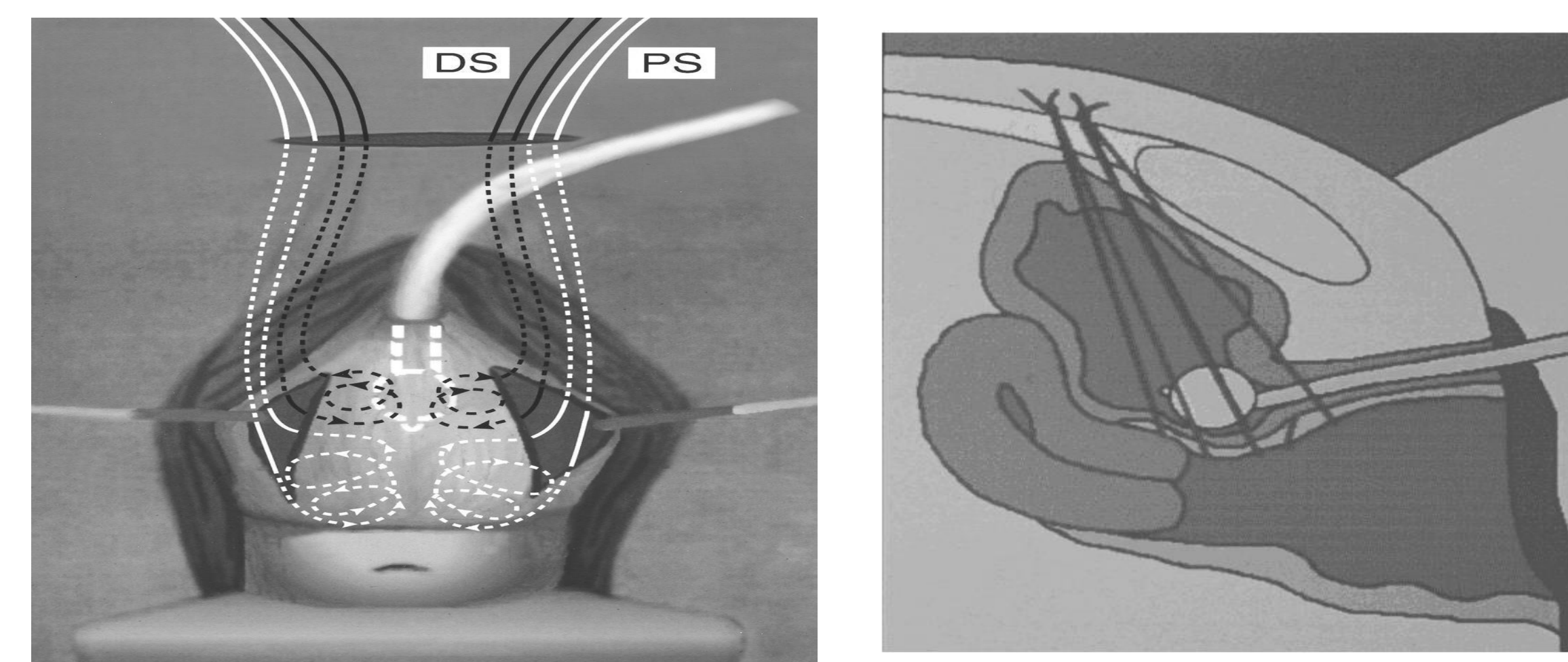


Figure 2: A) Schematic of AVWS technique passing sutures helically beneath anterior vaginal wall from bladder neck to upper vagina. Note the upper or proximal sutures (PS) incorporating the cardinal ligament complex to achieve a hysteropexy. The distal sutures (DS) complete the anterior suspension repair by providing support to the trigone and bladder neck areas. B) Sagittal view of cystocele repair and hysteropexy after anterior compartment suspension.

## Results

- For 2012 – 2013, 34 of 48 women met inclusion criteria (Table 1 A)
- With the 3% inflation adjustment for 2012, the mean total cost was \$3681 ± \$764, with a median cost of \$3664.
- Anesthesia, operating room, and room and bed costs differed significantly from 2012 to 2013.
- Only pharmacy cost differed between payer mix and Medicare.
- The sample analyzed had a shorter mean surgery time (69.6 min) compared to the overall AVWS population (86 min) (Table 1 B).
- This cost data compares favorably to the average cost reported in contemporary U.S. literature for TVT (\$8082 – 9579), TOT (\$9017), and BC (\$9320 - \$10545)<sup>8,9,10</sup>

Table 1 B. Student t-test for Comparison of Cost-Effectiveness Sample to the Rest of the Population

	Sample (n = 34)	Rest of Population (n = 198)	p
Age at AVWS	65.7 (10.5)	64.6 (11.1)	0.6031
BMI	24.9 (6.5)	26.5 (6.0)	0.1802
Parity	2.4 (1.3)	2.6 (1.5)	0.3025
Length of Surgery	69.6 (14.8)	86.0 (26.1)	<0.0001

All values reported as means (standard deviations). With 3% inflation adjustment

## Conclusions

- The AVWS mean total cost was \$3681, with an increase in cost from 2012 to 2013 related to anesthesia, operating room, and room and bed costs, a figure much lower than most reported costs for comparable anti-incontinence procedures

## References

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