

# Outcomes of Abdominal Apical Suspension Using Mesh in a Tertiary Training Hospital: A Seven-year Retrospective Review

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## ABSTRACT

**Background.** Pelvic organ prolapse (POP) is an inconvenience that can affect a woman's well-being. Reconstructive pelvic floor surgery involves repairing defects in the endopelvic fascia and pelvic floor musculature as close to the physiologic and anatomic norm. The cornerstone of successful prolapse repair is a strong apical support.

**Objective.** The aim of the study is to determine the outcomes of abdominal sacrocolpopexy (ASC) and abdominal sacrohysteropexy (ASH) in the Philippines.

**Methods.** The study utilized a descriptive study design to compare the pre-operative and post-operative Pelvic Organ Prolapse Quantification Score (POP-Q Score), presence of mesh complications, and urinary/bowel symptoms in patients operated within 2010-2016 in a Philippine tertiary training hospital. Based on recovered charts and inclusion/exclusion criteria, this study sampled 34 of 50 patient records. Statistical measures of median and range were used to describe pre-operative and post-operative POP-Q scores in any two follow-ups within 6-, 12-, 18-, and 24-month interval. The objective success rate and incidence of urinary/bowel symptoms were described using frequencies and percentages. Presence of any mesh erosion was noted for each follow-up. McNemar's test was applied to assess the comparative occurrence of each symptom comparing between the pre-operative and first follow-up periods.

**Results.** ASC had a success rate of 73.7% at six months and 56.3% at 12 months post-surgery. ASH showed an 84.6% success rate at six months and 71.4% at 12 months. Apical support has a 97% success rate without affecting the anterior or posterior compartments. Out of 20 ASC patients, 5 (25%) exhibited anterior compartment descent, whereas two out of 14 ASH patients (14.2%) had the same condition. It is observed that the anterior vaginal wall has the higher tendency to descend after reconstructive surgery, independent of route or technique. In addition, not all patients with surgical prolapse beyond -1 experienced symptomatic vaginal bulges. Overall, a notable decrease in the occurrence of urine symptoms was seen after the surgery. No mesh erosion was seen within the initial two years of follow-up but there was a single reported instance of abdominal hernia, an uncommon consequence.



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the anterior or posterior compartments. Out of 20 ASC patients, 5 (25%) exhibited anterior compartment descent, whereas two out of 14 ASH patients (14.2%) had the same condition. It is observed that the anterior vaginal wall has the higher tendency to descend after reconstructive surgery, independent of route or technique. In addition, not all patients with surgical prolapse beyond -1 experienced symptomatic vaginal bulges. Overall, a notable decrease in the occurrence of urine symptoms was seen after the surgery. No mesh erosion was seen within the initial two years of follow-up but there was a single reported instance of abdominal hernia, an uncommon consequence.

**Conclusion.** This study demonstrated that ASC and ASH have good success rate in apical support; however, descent of the anterior or posterior compartment diminishes the overall success rate in terms of over-all objective POP-Q score. Both resulted to improvement in symptoms with minimal complications.

**Keywords:** pelvic organ prolapse, sacrocolpopexy, sacrohysteropexy, mesh

## INTRODUCTION

Pelvic organ prolapse (POP), the descent of one or more pelvic structures, is an inconvenience that can affect the psychological, physical, and social well-being of a woman. Based on objective pelvic examination, the prevalence of pelvic organ prolapse varies between 30% to 40%.<sup>1,2</sup> The prevalence of symptomatic pelvic organ prolapse in epidemiological studies range from 6% to 8%.<sup>3,4</sup> According to a study by Wu et al., the lifetime risk of requiring surgery for POP by the age of 80 is 12.2%.<sup>5</sup> There are three different compartments which may prolapse—apical, anterior, and posterior. They usually prolapse in combination. The Aa and Ba correspond to the anterior compartment while the Ap and Bp correspond to the posterior compartment. Apical prolapse, the descent of uterus, cervix, or vaginal vault, is designated by the C and D points in the Pelvic Organ Prolapse Quantifications System (POP-Q). Risk factors for pelvic organ prolapse are multifactorial. They may be an outcome from anatomical weakness, neurologic or physiologic causes, genetics, lifestyle, trauma, hysterectomy, and obesity among many other risk factors.<sup>6-8</sup>

In a Philippine tertiary training hospital, patients with apical prolapse are screened and counseled about their surgical options—vaginal or abdominal route. The abdominal procedures consist of sacrohysteropexy if uterine preservation is desired, sacrocolpopexy for post-hysterectomy, and uterosacral ligament fixation that can be performed concurrently with hysterectomy.<sup>9,10</sup> The vaginal approach includes sacrospinous ligament fixation, iliococcygeal fixation, utero-sacral suspension, infracoccygeal sling sacropexy, and McCall culdoplasty.<sup>10-12</sup> The choice of procedure should be based on the patient's age, risk factors, previous surgery, preference, level of physical and sexual activity, and surgeon's expertise.

Polypropylene mesh is commonly used in abdominal sacrocolpopexy (ASC) and abdominal sacrohysteropexy (ASH) to recreate or augment the uterosacral support. In other institutions, native tissue such as fascia lata is used instead of synthetic mesh, despite the mesh being superior in terms of POP-Q points, POP-Q stage, and objective anatomic failure rates.<sup>13,14</sup> Possible complications reported from abdominal approach of either procedure are hemorrhage, de novo stress urinary incontinence, mesh erosion in the bowels or in the vault, dyspareunia, gastrointestinal complications, infection, and prolapse recurrence.<sup>15-18</sup> The purpose of this study is to evaluate the outcomes of open laparotomy abdominal apical suspension performed between 2010 and 2016 at a Philippine tertiary hospital with a Urogynecology and Pelvic Reconstructive Surgery Program. This review is the first to document the Philippine experience with surgical mesh in prolapse procedures.

## Review of Literature

Reconstructive pelvic floor surgery involves repairing defects in the endopelvic fascia and pelvic floor musculature

as close to physiologic and anatomic norm. This has been achieved through coaptating and plicating structures and augmenting tissues using biologic or synthetic grafts. Long-term success rates with biologic or synthetic mesh vary from 61% to 100% for suburethral slings, from 68% to 100% for ASCs, and from 84% to 100% for posterior repairs.<sup>18-20</sup> Anterior repairs, however, have more inconsistent results (37%–100%).<sup>21,22</sup> Superior success rates with graft use have been confirmed by meta-analysis for ASCs and suburethral slings.<sup>18,20</sup>

Loss of De Lancey Level I support due to laxity or damage to the uterosacral-cardinal ligament complex result to apical prolapse. Apical compartment prolapse can be further differentiated as descent of the cervix or vaginal vault post hysterectomy. It may or may not involve other compartment descent. Pessaries are option for conservative management. Surgical treatment options include abdominal and vaginal route. According to a comprehensive review, sacrocolpopexy has been found to exhibit superior long-term efficacy in managing apical prolapse compared to vaginal procedures. However, it is worth noting that vaginal surgery might still be regarded as a viable alternative in certain cases.<sup>22,23</sup> Meta-analysis comparing abdominal sacrocolpopexy and vaginal sacrospinous colpopexy, showed ASC has lower risk of subjective failure, lower recurrence of vault prolapse, less urinary stress incontinence, and dyspareunia but has longer operating and recovery time compared to sacrospinous colpopexy.<sup>9,22-24</sup>

Currently, sacrocolpopexy is the gold standard for the treatment of apical prolapse.<sup>25,26</sup> It has a 74% success rate in a study with a mean follow-up of 13.7 years.<sup>18</sup> The procedure involves graft placement at the rectovaginal fascia posterio-riorly, with or without an anterior graft attachment at the pubocervical fascia near the vaginal apex after developing the rectovaginal space and vesicovaginal space, respectively. The opposite end of the mesh is attached retro-peritoneally to the anterior longitudinal ligament at the S1-S2 level after incising the peritoneum to open the presacral space. The anterior and posterior grafts sutured to the vagina are drawn toward the sacrum, ensuring adequate vaginal tension with prolapse reduction. The peritoneum overlying the presacral space is then closed. Its advantage includes supporting the prolapsed vaginal apex while maintaining vaginal function and length.<sup>26</sup>

On the other hand, sacrohysteropexy is offered to patients who desire uterine preservation. It has the same surgical principles as sacrocolpopexy. Sacrohysteropexy uses a Y-shaped mesh where the arms are passed through the openings (windows) created in the avascular area of the right and left broad ligaments, while the longitudinal portion of the mesh is attached to the anterior longitudinal ligament overlying the sacrum. Complications associated with abdominal sacrohysteropexy seem to be comparable with those associated with sacrocolpopexy.<sup>17,27</sup>

The Colpopexy and Urinary Reduction Efforts (CARE trial) defines the objective measure of anatomical failure as re-operation or pessary for POP or POP-Q measurements, as follows:  $C > [-2/3 \times \text{total vaginal length}]$  (i.e., the vaginal apex descends below upper third of the vagina) or one of points Ba, Bp is  $>0$  cm (i.e., the anterior (Ba) or posterior (Bp) vaginal wall prolapses beyond the hymen).<sup>14,18</sup>

Costantini and colleagues compared patients having sacrohysteropexy to those having sacrocolpopexy.<sup>27</sup> Sacrohysteropexy group had shorter operative time, less blood loss, and shorter hospital stay. There was no significant difference between objective or subjective cure rates. There was also no significant difference between the surgical groups in terms of post-operative complications.

**METHODS**

This descriptive study compared pre- and post-operative POP-Q Score, mesh complications, urinary and bowel symptoms in patients admitted from January 1, 2010 to December 31, 2016 in a Philippine tertiary training hospital with urogynecology program. Patients should have undergone at least two follow-up visits within 6-, 12-, 18-, and 24-month interval. Patients who had only one outpatient clinic follow-up in the two years following abdominal apical suspension were excluded. Data was collected through retrospective chart review from the hospital medical record and the Urogynecology Section charts (Figure 1). Only 36 out of 50 records were retrieved due to missing files.

Open epi was used to compute the minimum sample size of the study. Specifying a design effect of 1, confidence interval of 95% (such that  $z=1.96$ ), a proportion of 97% success rate among patients who underwent the procedure based on the study by Barber et al., and a maximum tolerable error of 5%, the minimum sample size requirement is 45 patients.<sup>28</sup> Total enumeration of patient records eligible for the study was used as sampling method. Demographic variables including age, height, weight, body mass index, gravidity and parity, age of menopause (if applicable), and

years from onset of menopause to time of surgery, and smoking history, use of steroids or hormones were collected. Clinical factors at time of surgery such as smoking and other comorbidities (asthma, tuberculosis, or any disease that may cause chronic cough) were noted.

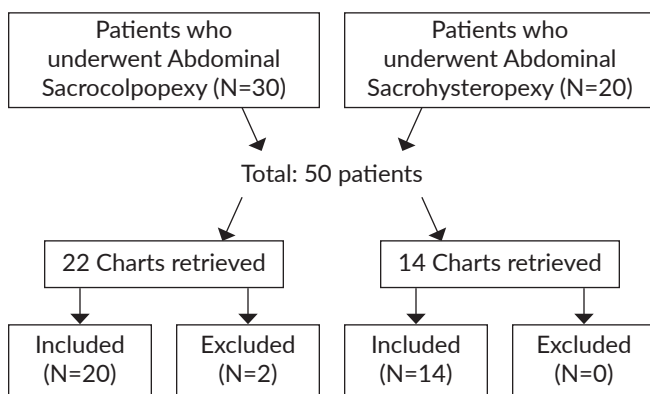
Each patient’s medical records were reviewed for demographics, comorbidities, medications, diagnosis, operation done, comparison of pre- and post-operative POP-Q score, and presenting urinary or bowel symptoms before and after surgery. The anatomical outcomes were classified based on the Pelvic Organ Prolapse Quantifications System (POP-Q). Measurement of the POP-Q points were made using a measuring stick with 1cm gradation by Urogynecology fellows-in-training. Objective failure was defined as any post-operative POP-Q point  $\geq$  stage II. The objective measure of the surgical success is defined as most prolapsed compartment less than -1 relative to the hymen or POP-Q score 0 and I based on the 2001 National Institutes of Health (NIH) Workshop on Standardization of Terminology for Researchers in Pelvic Floor Disorders.<sup>29</sup> Absence of palpable vaginal bulge was the subjective definition of treatment success. Recurrence of prolapse was defined as uterine prolapse POP-Q stage II or higher. Subjective symptoms were measured based on the presence of frequency, urgency, nocturia, urge incontinence, stress incontinence, hematuria, difficulty voiding, or straining in the absence of urinary tract infection. Presence of any mesh erosion was noted for each follow-up. These were obtained from the chart review of symptomatology pre-operatively and post-operatively.

Frequencies/percentages were used to describe the objective success rate during each follow-up period and incidence of urinary/bowel symptoms among patients operated with either abdominal sacrocolpopexy and abdominal sacrohysteropexy. McNemar’s test was used to compare the incidence of each symptom during the pre-operative versus the first follow-up period. Univariate logistic regression was used to determine which demographic and clinical variables were associated with operative failure. A 95% confidence interval was used in all analysis and a p-value of  $<0.05$  was considered significant.

**RESULTS**

A total of 34 patient records (68%) were included in this study out of the 50 patients who underwent abdominal apical suspension in a span of seven years (2010-2016). Fourteen records were not in file or cannot be found in the medical record section. Mostly, these missing records were of patients operated from the year 2010-2011. The two retrieved charts were not included because the patients only had one check-up post-operatively. Table 1 summarizes the patient demographics and clinical characteristics.

Overall, there was a decline in the frequency of follow-up visits observed in both groups during the course of the



**Figure 1.** Number of patients included in the study (2010-2016).

**Table 1.** Demographic and Clinical Profiles of Patients who Underwent Abdominal Apical Suspension

Characteristics	n=34
Age (in years), mean (SD)	53.0 (15.3)
Gravidity, mean (SD)	4.4 (2.3)
Parity, mean (SD)	3.9 (2.3)
Weight (in kg), mean (SD)	53.5 (7.5)
Height (in cm), mean (SD)	153.3 (4.9)
<b>Body Mass Index (in kg/m<sup>2</sup>)</b>	
Normal (percentage)	25 (78.1%)
Underweight (percentage)	2 (6.3%)
Overweight (percentage)	4 (12.5%)
Obese (percentage)	1 (3.1%)
Age of menopause (in years), mean (SD)*	45 (45.15)
Interval in years from menopause, mean (SD)*	12.5 (9.3)
<b>Smoking history</b>	
Currently smoking	0 (0.0%)
Non-smoker	34 (100.0%)
<b>Presence of respiratory disease</b>	
None	32 (94.1%)
Yes (Chronic)	2 (5.9%)
<b>Other co-morbidities</b>	
None	12 (35.3%)
Yes (Chronic Diseases)	22 (64.7%)
<b>Use of hormone/steroid prior to operation</b>	
No	27 (79.4%)
Yes	7 (29.6%)
<b>Use of hormone/steroid after operation</b>	
No	30 (88.2%)
Yes	4 (11.8%)
<b>Procedure</b>	
Sacrocolpopexy	20 (58.9%)
Sacrohysteropexy	14 (41.1%)
<b>Preoperative Pelvic Organ Prolapse Stage</b>	
I	0 (0.0%)
II	3 (8.8%)
III	11 (32.3%)
IV	20 (58.8%)

\* only applicable to the 20 patients who underwent abdominal sacrocolpopexy

study timeframe. Patients demonstrated high compliance within the six-month period following the surgical procedure, as they had a minimum of two follow-up checkups. The follow-up visits of abdominal sacrohysteropexy patients were lower. Half of them no longer followed up in the clinic at 24 months post-operation. Less than a quarter was seen after two years. Patients who had abdominal sacrocolpopexy had better follow-up compliance at 12 months (80%) and 23 months (40%).

Abdominal apical suspension for apical descent rendered 97% success rate for all patients seen within two years. The highest value of point C was only at -6 for sacrocolpopexy, with a range from -6 to -10. None of the point C were beyond total vaginal length (TVL) -2. In sacrohysteropexy, there was one patient who had C at -2 even at the immediate

post-operative period. This was the best possible score for her elongated cervix of 6 cm, given the TVL at 8 and D at -7. The median POP-Q scores present general successful prolapse repair for both groups. However, individual review of charts within six months post-operation showed five out of 20 patients who had abdominal sacrocolpopexy (25%), and two out of 14 patients who had sacrohysteropexy (14.2%) had anterior compartment descent (leading edge at -1 to 0). Of those who had anterior compartment descent after sacrocolpopexy, two had concurrent Burch colposuspension, one had anterior mesh interposition, and two without.

There were only two patients — one post-abdominal sacrocolpopexy and one post-sacrohysteropexy—who had an Ap and Bp at 0, six months post-operatively. These objective measurements technically translate to recurrent pelvic organ prolapse stage II; however, none of the patients complained of symptomatic vaginal bulge at six months.

At nine months post-sacrocolpopexy, one had a palpable anterior compartment prolapse (Aa +1 Ba +1 C -6/ Gh 4 Pb 3 TVL 7/Ap -3 Bp -3) and another post-sacrohysteropexy patient had recurrent pelvic organ prolapse stage III (Aa -3 Ba -3 C +4/ 6 2 8/-2 -2 -2). She was known to have elongated cervix (cervical length 6 cm). These two patients were offered reoperation, but they opted for pessary instead. The compartment-specific POP-Q scores in relation to follow-up visits are presented in Tables 2A and 2B.

Considering the overall POP-Q score, ASC had a 73.7% success rate for the first six months, whereas ASH had 84.6% (Table 3A). The success rate of the abdominal apical support surgery, when considering both procedures together, was found to be 78.1% at the 6-month follow-up and 54.5% at the 24-month follow-up (Table 3B). Other pertinent findings on chart review included absence of mesh erosion within two years of follow-up and one incidence of abdominal hernia post-operation.

## DISCUSSION

The minimum sample size of 45 based on a study by Barber et al. where a proportion of 97% success rate was seen among patients who underwent abdominal apical suspension and a maximum tolerable error of 5%, was not met in this study.<sup>28</sup> There was a total of 50 abdominal sacrocolpopexy and sacrohysteropexy done from 2010 to 2016. Only 34 charts retrieved met the inclusion criteria. Fourteen charts were not in file and patients of the two retrieved charts only had one follow-up check-up post-operatively. The data is not normally distributed.

Lower rate of follow-up visits were noted among patients who had ASH compared to those who had ASC. This may be due to the age category of patients who had ASH. These were young individuals aged 28-46 years old who may have been preoccupied with responsibilities such as work and family. Meanwhile, patients who had ASC were aged 44-79 years old, with the median age at 64. They could



**Table 2A.** POP-Q Scores of Patients who Underwent Abdominal Sacrocolpopexy during Pre-operative, Immediate Post-operative, and Follow-up Periods

Site	POP Q Scores, median (Range)					
	Pre-operative n=20	Immediate Post-operative n=20	6 <sup>th</sup> month n=19	12 <sup>th</sup> month n=16	18 <sup>th</sup> month n=6	24 <sup>th</sup> month n=8
Aa	2 (0 to 3)	-3 (-3 to -2)	-2 (-3 to -1)	-3 (-3 to -1)	-2 (-3 to -2)	-3 (-3 to -1)
Ba	5 (4 to 6)	-3 (-3 to -2)	-2 (-3 to -1)	-2 (-3 to -1)	-3 (-3 to 0)	-3 (-3 to 0)
C	5 (2 to 7)	-8 (-10 to -6)	-7 (-10 to -6)	-6 (-10 to -6)	-6 (-10 to -6)	-6 (-10 to -6)
Gh	6 (4 to 8)	4 (3 to 5)	4 (3 to 5)	4 (3 to 5)	4 (3 to 4)	4 (3 to 4)
Pb	2 (1.5 to 3)	4 (3 to 5)	4 (3 to 5)	4 (3 to 4)	4 (3 to 4)	3.5 (3 to 4)
TVL	8 (5 to 10)	8 (6 to 10)	7 (6 to 10)	7 (6 to 10)	7 (6 to 10)	7 (6 to 10)
Ap	1 (-1 to 3)	-3 (-3 to -2)	-3 (-3 to -2)	-3 (-3 to -2)	-3 (-3)	-3 (-3 to 0)
Bp	3 (-1 to 8)	-3 (-3 to -3)	-3 (-3 to 1)	-3 (-3 to 1)	-3 (-3 to -3)	-3 (-3 to 0)

Aa: A point located in the midline of the anterior vaginal wall three (3)cm proximal to the external urethral meatus

Ba: Most distal position of any part of the upper anterior vaginal wall

C: Leading edge of the vaginal cuff

Gh: genital hiatus

Pb: perineal body

TVL: total vaginal length

Ap: A point located in the midline of the posterior vaginal wall three (3)cm proximal to the hymen

Bp: Most distal position of any part of the upper posterior vaginal wall

**Table 2B.** POP Q Scores of Patients who Underwent Abdominal Sacrohysteropexy during Pre-operative, Immediate Post-operative, and Follow-up Periods

Site	POP Q Scores, median (Range)					
	Pre-operative n=14	Immediate Post-operative n=14	6 <sup>th</sup> month n=13	12 <sup>th</sup> month n=7	18 <sup>th</sup> month n=4	24 <sup>th</sup> month n=3
Aa	1 (-2 to 3)	-3 (-3 to -3)	-3 (-3 to -1)	-3 (-3 to -1)	-2 (-3 to -1)	-3 (-3 to -1)
Ba	2 (0 to 7)	-3 (-3 to -2)	-3 (-3 to -1)	-3 (-3 to -1)	-2 (-3 to -1)	-3 (-3 to 0)
C	2.5 (0 to 6)	-5 (-10 to -2)	-5 (-10 to -4)	-4 (-6 to -2)	-5 (-6 to -4)	-4 (-6 to 4)
Gh	5 (4 to 7)	4 (-7 to 3)	4 (-7 to 3)	4 (3 to 5)	3.5 (3 to 4)	4 (3 to 5)
Pb	2 (0 to 3)	4 (2 to 4)	4 (2 to 4)	3 (3 to 4)	3.5 (3 to 4)	3 (3 to 3)
TVL	8 (7 to 12)	8 (7 to 12)	8 (7 to 12)	8 (5 to 8)	8 (5 to 8)	8 (7 to 8)
Ap	0 (-2 to 3)	-3 (-3 to -3)	-3 (-3 to -3)	-3 (-3 to 0)	-3 (-3 to -3)	-3 (-3 to 0)
Bp	0 (-2 to 7)	-3 (-3 to -3)	-3 (-3 to -3)	-3 (-3 to -1)	-3 (-3 to -3)	-3 (-3 to 0)
D	-1.5 (-3 to 7)	-8 (-10 to -7)	-8 (-10 to -7)	-7 (-8 to -7)	-8 (-5 to -8)	-8 (-5 to -8)

Aa: A point located in the midline of the anterior vaginal wall three (3)cm proximal to the external urethral meatus

Ba: Most distal position of any part of the upper anterior vaginal wall

C: Most distal edge of the cervix

Gh: genital hiatus

Pb: perineal body

TVL: total vaginal length

Ap: A point located in the midline of the posterior vaginal wall three (3)cm proximal to the hymen

Bp: Most distal position of any part of the upper posterior vaginal wall

D: Posterior fornix in a woman who still has a cervix

already be retired from employment, giving them more time to visit the clinic. ASC patients accounted for eight of 11 patients who followed up 24 months after surgery. Two of three sacrohysteropexy patients had stage II or III recurrent pelvic organ prolapse at 24 months. This may explain their willingness to go for follow-up visit.

In this study, a postoperative score of 0 or -1 in any of the compartments did not translate to symptomatic vaginal bulge. It was at +1 and beyond when the vaginal bulge was

palpated by the patient. Even with this finding, it is erroneous to assume that those who did not follow up six months onwards after operation had successful objective outcomes with no prolapse recurrence. It may even be possible that there was prolapse recurrence, but it was not as bothersome compared to their pre-operative status.

In the abdominal sacrocolpopexy group, 18 out of 20 patients had co-existing medical comorbidities. This factor could have encouraged patients to follow-up at the

**Table 3A.** Post-operative Success Rate during the Follow-up Periods for Abdominal Sacrocolpopexy and Sacrohysteropexy

Follow-up period	Combined	Sacrocolpopexy	Sacrohysteropexy	p-value
	Rate (95% confidence interval)			
6 <sup>th</sup> month	78.1% (59.5-89.6%)	73.7% (53.9-93.5%)	84.6% (65.0-100.0%)	0.4626
12 <sup>th</sup> month	60.9% (38.6-79.4%)	56.3% (31.9-80.5%)	71.4% (38.0-100.0%)	0.4925
Overall	61.8% (43.8-77.0%)	55.0% (33.2-76.8%)	71.4% (47.8-95.1%)	0.3320

**Table 3B.** Post-operative Success Rate during the Follow-up Periods for both Abdominal Apical Suspension

Outcome	Follow-up period				
	6 <sup>th</sup> month	12 <sup>th</sup> month	18 <sup>th</sup> month	24 <sup>th</sup> month	Overall
Success	25	14	8	6	21
Failure	7	9	2	5	13
Total	32	23	10	11	34
Rate with 95% confidence interval	78.1% (59.5-89.6%)	60.9% (38.6-79.4%)	80.0% (37.8-96.3%)	54.5% (22.6-83.2%)	61.8% (43.8-77.0%)

Urogynecology clinic since they were also being seen in a nearby medical clinic within the same hospital complex. Four of the 14 patients who had abdominal sacrohysteropexy had other medical conditions (two with controlled hypertension, one with cervical intraepithelial neoplasia, and one with umbilical hernia). However, only one of them followed-up beyond six months post-operation.

Abdominal sacrocolpopexy is the gold standard in apical suspension with a 78-100% success rate.<sup>14</sup> For sacrohysteropexy, early post-operative success rates range from 79-100%.<sup>30,31</sup> Currently, there are no standardized outcome measures for apical procedures but available studies use either anatomical or symptom outcome measures.<sup>11</sup>

In this 7-year review, in terms of objective finding of prolapse recurrence, ASC has a success rate of 73.7% at six months and 56.3% at 12 months. ASH, on the other hand, has a success rate of 84.6% at six months and 71.4% at 12 months.

For apical support, the over-all success rate is 97%. This is comparable to various published literature. A strong apical support is the cornerstone to a successful prolapse repair.<sup>32,33</sup> Many studies show that sacrocolpopexy is effective at correcting apical vaginal vault prolapse, although the risk of prolapse at other sites, and the optimal way to address all potential defects is insufficiently studied. It is said that the apex descends with the anterior compartment and that addressing only the anterior compartment without the apex increases the risk of recurrent prolapse. Meanwhile, there is still limited information regarding the effects of ASC on the posterior vaginal wall.<sup>34</sup> Sacrohysteropexy may fail due to a diminished capacity to suspend the anterior vagina with the uterus in place.<sup>23</sup>

From the review of charts, concomitant descent of the anterior or posterior compartment, not fully resolved by abdominal sacrocolpopexy or sacrohysteropexy, was addressed by adding anterior mesh interposition or posterior colporrhaphy. Based on studies, for triple compartment prolapse, abdominal sacrocolpopexy with anterior mesh extension showed good outcomes.<sup>34,35</sup> Burch colposuspension

with sacrocolpopexy can also be performed in patients who have stress incontinence. At the same time, it can also address the anterior compartment prolapse.

In this study, none of the patients had reoperation, and only two had awareness of prolapse post-operatively. The two patients with symptomatic prolapse recurrence were then fitted with pessaries.

## CONCLUSION

An analysis of the seven-year results of abdominal apical suspension with mesh in the Philippines indicated a success rate of 97%, which is consistent with findings in existing publications. The overall success rate was 61.8% when there was vaginal compartment descent equivalent to or greater than POP stage II. Two patients experienced a symptomatic vaginal bulge and were then treated with a pessary. No one underwent a second operation. No mesh degradation was seen within the initial two years of follow-up. An abdominal hernia was a rare complication noted in one of the patients.

## Recommendations

To improve the association between objective POP-Q values and subjective findings, it is recommended to undertake a prospective research study. To minimize errors in measuring POP-Q points, it is advisable to have a senior Urogynecology fellow or consultant do at least two replications or measures of the POP-Q score. Future research might include the use of standardized validated questionnaires before and after surgery to evaluate patient satisfaction and genitourinary issues. Recruiting patients for the prospective trial and providing thorough counseling on the significance of regular follow-up exams beyond the 12-month period might enhance the statistical power of the study.

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**Statement of Authorship**

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