APICAL SUSPENSION SURGERY FOR PELVIC ORGAN PROLAPSE IN THE UK: 2022-23

Chapter 1 Introduction

BSUG Database

The British Society of Urogynaecology (BSUG) database was established in 2004 and launched online in 2007. It collects data on operations for urinary incontinence and pelvic organ prolapse from the UK and is open to BSUG members. Access to the database is password-protected. Data entry is self-reported and voluntary and is currently required for a centre to be accredited in urogynaecology by BSUG. Patient consent is required for data entry.

Database Usage

At the time of data retrieval over **201,200** procedures for prolapse and urinary incontinence had been recorded in the BSUG database.

Audit Timeframe and Operations included

The timeframe for this audit was the start of 2022 to the end of 2023. Data was downloaded on the 24th August 2024.

The following apical suspension operations included in this audit as follows:

Vaginal procedures

1. Sacrospinous Colpopexy (SSC)
2. Sacrospinous Hysteropexy (SSH)

Abdominal procedures

1. Sacrocolpopexy (SCP) open and laparoscopic
2. Sacrohysteropexy (SHP) open and laparoscopic

Please note all of these procedures may have been performed as a sole procedure or combined with a pelvic floor repair.

Outcomes

Follow up interval after surgery

The database records the 1st follow-up after surgery at 4 specific intervals of 6 weeks, 3 months, 6 months and 1 year. How the follow-up was carried out can also be

recorded: Face-to-face outpatient visit, postal questionnaire, online, telephone follow-up, follow-up at the GP practice or as per local agreement.

Global impression of improvement (GII) after surgery

The outcome of surgery was assessed using patient-reported global impression of improvement (GII). The scale has 7 outcome categories *(Table 1)*.

Table 1: *Global Impression of Improvement after surgery*

Very much better
Much better
A little better
No change
A little worse
Much worse
Very much worse

Surgical complications

The database records specified intraoperative and postoperative complications *(Table 2)*

Table 2: *Intraoperative and postoperative complications*

Intraoperative	Postoperative
Ureteric injury	Graft complications
Bladder injury	Blood transfusion
Bowel injury	Thromboembolism
Urethral injury	Return to theatre <72 hrs post op
Nerve injury	Catheterisation>10 days
EBL>500ml	Readmission within 30 days of procedure
	Death
	Persistent postoperative pain

The database allows users to record the occurrence of postoperative 'graft complications' along with the ICS-IUGA classification code for graft complications. The specific nature of the complication requires the complication codes to be manually analysed once extracted from the database. This was not done due to time constraints. So, 'graft complications' could encompass various mesh-related problems including pain, urinary symptoms, infection and mesh exposure or erosion. It does not specify the exact nature of the complication and could encompass various mesh related problems including pain, urinary symptoms, infection and mesh exposure or extrusion.

It is important to note that vaginal vault operations may have been carried out along with other concomitant procedures that may have a confounding effect on the complication rate.

Chapter 2 Number of procedures

For the timeframe 2022 to 2023 inclusive, there were 2809 procedures which have been included in this audit. 78% (2197) of these procedures were non-mesh transvaginal apical suspension procedures (Table 3). Overall, sacrospinous colpopexy was the most frequently performed procedure (1844, 66%)

We have shown the number of vaginal vault suspension procedures added to the BSUG database in 2018, 2020 and 2021 but have not included them in the overall analysis. The 2018 numbers are of interest as sacrocolpopexies and sacrohysteropexies were classified as 'high vigilance restriction' procedures by NHS England in July 2018 and the 1st coronavirus lockdown in the UK occurred in March 2020. Table 3 shows the number of procedures per year for each of the operations

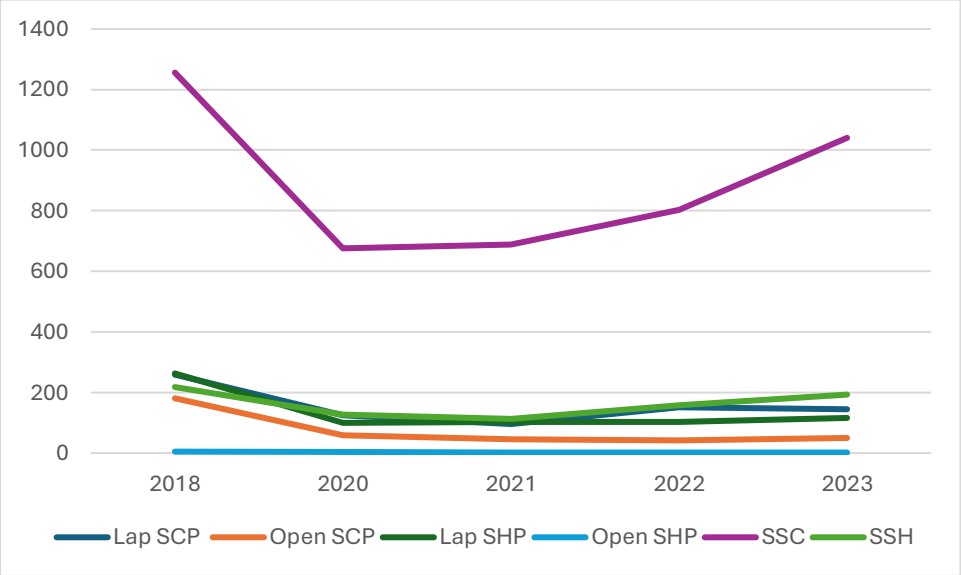
Table 3: *Number of apical suspension procedures 2018, 2020-2023*

	2018	**2020**	**2021**	**2022**	**2023**	**Total for 2022 and 2023**
Lap sacrocolpopexy	259	124	96	151	144	**295**
Open sacrocolpopexy	181	58	46	42	50	**92**
Lap sacrohysteropexy	263	100	103	104	117	**221**
Open sacrohysteropexy	5	3	2	2	2	**4**
Sacrospinous colpopexy	1256	676	689	804	1040	**1844**
Sacrospinous hysteropexy	218	127	113	159	194	**353**

Changes in the number of Apical suspension procedures

As expected, there was a fall in the number of all 6 apical suspension procedures in 2020 and 2021 compared with 2018 (Table 3 & Figure 1). Numbers of procedures had not returned to 2018 levels by 2023.

Figure 1: *Number of apical suspension procedures in 2018, 2020-2023*



Chapter 3 Surgery for primary and recurrent prolapse

Laparoscopic sacrocolpopexy and laparoscopic sacrohysteropexy were the procedures that were performed most for primary prolapse (86.0% each). Open hysteropexy was performed for primary prolapse in all 4 cases.

Table 4: *Apical suspension procedures for primary prolapse*

	Primary Surgery (n)	**%**
Lap sacrocolpopexy N= 295	254	86%
Open sacrocolpopexy N= 92	74	80%
Lap sacrohysteropexy N= 221	191	86%
Open sacrohysteropexy N=4	4	100%
Sacrospinous colpopexy N= 1844	342	18%
Sacrospinous hysteropexy N= 353	47	13%

Chapter 4 Outcomes of surgery

Global impression of improvement (GII) after apical suspension procedures

GII was recorded at follow up in:

	Percentage of episodes with a GII score recorded
Lap sacrocolpopexy	56% of episodes
Open sacrocolpopexy	59% of episodes
Lap sacrohysteropexy	62% of episodes
Open sacrohysteropexy	25% of episodes
Sacrospinous colpopexy	58% of episodes
Sacrospinous hysteropexy	58% of episodes

Episodes reporting very much better (VMB) or much better (MB) GII were considered cured. Sacrocolpopexy (both laparoscopic and open) had the highest percentage of VMB or MB. (Table 5)

Table 5: *Global impression of improvement after apical suspension procedures*

	GII – Very much better or Much better outcomes, %(n)
Lap sacrocolpopexy N=165	93% (n=155)
Open sacrocolpopexy N= 54	93% (50)
Lap sacrohysteropexy N=136	89% (121)
Open sacrohysteropexy N=1	0 (0%)
Sacrospinous colpopexy N=1075	88% (950)
Sacrospinous hysteropexy N=206	91% (187)

Follow up Interval

For all procedures follow up was short term and occurred in 6 months of less in over 90% of cases.

Table 6: *Follow up interval*

	6 months or less, % (n)
Lap sacrocolpopexy N=171	92% (158)
Open sacrocolpopexy N=54	93% (50)
Lap sacrohysteropexy N=144	96% (138)
Open sacrohysteropexy N=1	100% (1)
Sacrospinous colpopexy N=1105	93% (1031)
Sacrospinous hysteropexy N=209	96% (201)

Method of follow up

Face-to-face outpatient visit was the most common way patients were reviewed after surgery

Table 7: *Method of follow-up*

	Face to Face, % (n)	**Phone, % (n)**
Lap sacrocolpopexy N=163	86% (140)	14% (23)
Open sacrocolpopexy N= 53	94% (50)	6% (3)
Lap sacrohysteropexy N=134	93% (125)	7% (9)
Open sacrohysteropexy N=1	100% (1)	0% (0)
Sacrospinous colpopexy N=1038	81% (845)	19% (193)

Sacrospinous hysteropexy N=208	78% (162)	22% (46)

Chapter 5 Complications

Intraoperative and postoperative complications

The rates of intraoperative and postoperative complications are show in Table 8. These rates include apical suspension procedures with concomitant procedures which may have a confounding effect.

Overall, when the intraoperative and postoperative rates were combined, open sacrocolpopexy had the highest complication rate (13.2%) and sacrospinous hysteropexy had the lowest rate (4.6%). Open sacrohysteropexy had a cumulative rate of 50% however there were only 4 cases in this audit, with only 2 reporting follow up in certain sections leading to a significant skew of data.

Graft complications

The database allows the presence or absence of a 'graft complication' to be recorded. However, the term is non-specific and may refer to a variety of mesh-related problems An exact incidence of postoperative graft complications was difficult to obtain due to the lack of long-term follow-up and missing values. These factors are likely to result in an underestimation of the incidence.

Persistent post operative pain

The reported rate of post-operative persistent pain is shown in Table 8:
- 3% after sacrospinous hysteropexy
- 3% after sacrospinous colpopexy
- 4.5% after laparoscopic sacrocolpopexy
- 8% after open sacrocolpopexy
- 7% after laparoscopic sacrohysteropexy
- 0% after open sacrohysteropexy, however, there was only 1 case with follow up for this question.

Table 8:*Intra and post operative complications, percentage, (number of complications), [number of cases with follow up]*

	Lap SCP	Open SCP	Lap SCH	Open SCH	SSC	SSH

Ureteric Injury (Intraop)	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
Bladder injury (Intraop)	0.3% (1) [292]	1.1% (1) [90]	0.8% (1) [220]	0 [4]	0.3% (6) [1744]	0.3% (1) [350]
Vaginal Button Hole (Intraop)	0.7% (2) [292]	0 [90]	0.8% 1 [220]	0 [4]	0.06 (1) [1744]	0 [350]
Urethral Injury (Intraop)	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
Bowel Injury (Intraop)	0 [292]	0 [90]	0 [220]	0 [4]	0.17% (3) [1744]	0 [350]
Vascular Injury (Intraop)	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
Neurological Injury (Intraop)	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
EBL >500ml	0 [292]	1.1% (1) [90]	0 [220]	0 [4]	0.46% (8) [1744]	0 [349]
Cumulative Intraop rate	**1%**	**2.2%**	**1.6%**	**0%**	**0.99%**	**0.3%**
Perioperative Blood transfusion	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
Perioperative VTE	0 [292]	0 [90]	0 [220]	0 [4]	0 [1744]	0 [350]
Intraoperative death	0 [292]	0 [90]	0 [220]	0 [4]	0.06% (1) [1744]	0 [350]
Catheterisation >10days	0.5% (1) [187]	0 [63]	1.2% (2) [162]	50% (1) [2]	2.5% (31) [1215]	1.3% (3) [225]
Readmission <30 days	0 [187]	0 [62]	0 [163]	0 [2]	0 [1212]	0 [225]
Return to theatre <72 hrs	0.5% (1) [189]	3% (2) [64]	0.6% (1) [162]	0 [2]	0.5% (6) 1215	0 [225]
Persistent post operative pain	4.5% (7) [157]	8% (4) [49]	7% (9) [129]	0 [1]	3% (28) [924]	3% (6) [188]
Graft complications	1.3%(1) [77]	(0) [29]	1.08%(1) [93]	0 [0]	NA	NA
Cumulative rate overall	**7.8%**	**13.2%**	**11.48%**	**50%**	**7.05%**	**4.6%**

Chapter 6 Limitations of the Audit

Not every operation performed for the treatment of apical prolapse in 2022 and 2023 will have been included in this analysis as use of the database is voluntary and open only to BSUG members. Some procedures will have been performed by surgeons who are not members of BSUG. A comparison to HES has not been made. In addition, caution must be applied to the use and interpretation of this report because of missing data and the limited recording of long-term outcomes – both positive and negative. This is particularly so for long-term complications which may arise after the initial period of follow-up and which may have been treated in other units. Missing follow up data is ongoing issue due to known Urogynaecology Clinic capacity issues and lack of administrative support to input data in some centres.