



## Study of POP-q Staging Pre and Post Operatively in Cases of Uterovaginal Prolapse Undergoing Hysterectomy

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### Abstract

**Background:** Uterovaginal prolapse is a common condition affecting women in late reproductive and Perimenopausal, Postmenopausal age groups. Evaluating pelvic organ prolapse in an objective, reproducible, easy to apply method is required for proper management. POP-q system is useful in quantitative classification. Aim of the study was preoperative and postoperative evaluation of pelvic organ prolapse by POP Q system in patients undergoing vaginal hysterectomy. **Methods:** In this observational study, 100 patients having pelvic organ prolapse, underwent elective vaginal hysterectomy with pelvic floor repair at Terna medical college & Hospital during January 2019 to July 2019. POP Q was done preoperatively and after completion of surgery by the same surgeon and values analysed. **Results:** Pre and post-operative POP-q classification studied and mean of each points compared. **Conclusions:** The post-operative POP Q was analysed and the patients having grade 0 were 63 (optimum anatomical outcome) and patients having grade 1 were 36 (satisfactory anatomical outcome).

**Keywords:** POP-q, Uterovaginal prolapse

## INTRODUCTION

Pelvic organ prolapse (POP) is displacement of pelvic organs from its normal anatomical position. Pelvic organ prolapse quantification (POP Q) system refers to an objective, site specific system for describing and staging pelvic support in women<sup>[1]</sup>. It provides a standardized tool for documenting, comparing and communicating clinical finding with proven interobserver and intra-observer reliability<sup>[2]</sup>. There are so many system of staging POP, but most commonly used one is POP Q system which is being approved by international continent society (ICS) and American Urogynecologic society (AUGS)<sup>[3]</sup>. Surgery for prolapse of pelvic organ accounts for 20% of total gynecological operations and it increases to around 59% in elderly women. Lifetime risk of prolapse surgery in a woman is 11%.<sup>[3]</sup>

### Aim & objective:

To compare POP Q staging pre and post operatively in a case of uterovaginal prolapse undergoing vaginal hysterectomy (VH) with pelvic floor repair (PFR) and quantitatively assess the outcome of surgery.

### Methodology:

This is a prospective study on 100 patients fulfilling the inclusion criteria, will be done in dept. of obstetrics & gynecology in Terna Medical College & Hospital.

**Inclusion criteria:** Age between 35-70 years, complaining of something coming out per vagina,

**Exclusion criteria:** Pregnancy, Vault prolapse, associated urinary incontinence Patients with these inclusion criteria will be examined in OPD and POP Q staging will be done from stage 0-4. Proper history will be taken as age, parity mode of delivery, interval of delivery and associated urinary and bowel symptoms.

In POP system plane of hymen is taken as zero, points above that were given negative number and below that were given positive number.

**POP Q system has following points of measurement:**

Aa: It's a fixed landmark, which is 3cm proximal to external urethral meatus (EUM) in anterior vaginal wall. It ranges from -3 to +3

Ba: it's a variable point, which refers to most distal point along the anterior vaginal wall, in absence of prolapse Aa and Ba are almost same point, It ranges from -3 to + tvl (total vaginal length)

Ap: Its 3cm proximal to hymen in posterior vaginal wall, it ranges from -3 to +3

Bp: Most distal point in posterior vaginal wall and ranges from -3 to + tvl (-3 to +8)

tvL: Greatest depth of vagina in cm taken without straining (normal 8-12 cm)

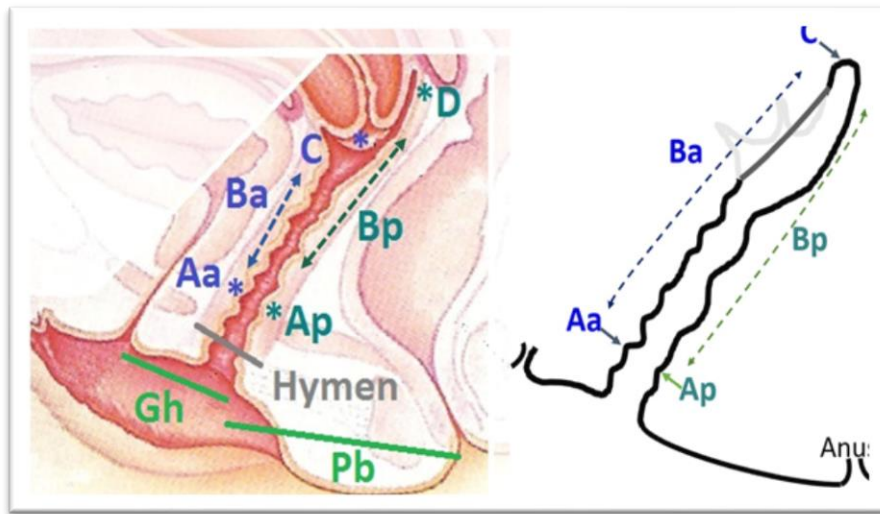
genital hiatus (gh): Middle of EUM to posterior hymenal ring (normal 2-4cm)

perineal body (pb): Posterior hymenal ring to mid anal opening (normal 3cm)

D: Level of uterosacral ligament attachment to posterior cervix (normal -8 to -10 cm)

#no cervix, no d point

C(cervix): most distal edge of prolapse



Sims speculum was used to examine prolapse. All measurements were made by using a marked Ayer's spatula. Gh, pb and tvl measured first when prolapse was reduced without straining. Other points are measured on straining. After surgery POP-Q will be done again by same person and results will be compared.

**RESULTS**

**Table – 1: (POP grid)**

Aa	Ba	C
gh	Pb	tvL
Ap	Bp	D

**Table – 2: (POPq classification)**

<b>Stage 0</b>	No prolapse
<b>Stage 1</b>	The most distal portion of the prolapse is more than 1cm above the level of hymen Quantification value is less than -1 cm.
<b>Stage 2</b>	The most distal portion of the prolapse is 1 cm or less proximal or distal to the hymen Quantification value is $\geq -1$ cm but $\leq +1$ cm
<b>Stage 3</b>	The most distal portion of the prolapse protrudes more than 1 cm below the hymenal plane. Quantification value is $>+1$ but $<+(tvL -2cm)$
<b>Stage 4</b>	Complete eversion of vaginal walls. Quantification value $> (+Tvl -2$ cm

**Table – 3: (Parity)**

Parity	No of patient	%
Upto 2	23	23
2-4	46	46
>4	31	31

**Table – 4: (POP points)**

Points	Pre op mean	Post op mean
Aa	2.31	-2.12
Ba	2.52	-2.27
C	2.69	-5.41
Ap	-2.21	-2.84
Bp	0.92	-2.50
D	-4.32	
Gh	6.5	4.0
Pb	2.63	4.21
tv1	8.9	8.3

**Table – 5: (stages)**

Stage of prolapse	No of cases	%
Stage 1	2	2
Stage 2	27	27
Stage 3	44	44
Stage 4	27	27

**Table – 6: (Age)**

Age of the patient	No of patients(n=100)	%
35-40	5	5
40-50	24	24
50-60	36	36
60-70	35	35

**RESULT:** Mean age of patients was 52 years (Table-6). 46% of cases have parity 2-4 and 31% have >4 parity (table-5). The distribution of patients according to POP Q classification was 27% in grade 2, 44% in grade 3 and 27% in grade 4. On comparing the pre operative and post-operative POP Q of the patient, the reduction in genital hiatus was by 2.5cm. The perineal body was increased by 1.5 cm and there was not much effect on the TVL (total vaginal length) which was reduced by 0.6 cm, from a mean Tvl of 8.9 to 8.3. The reduction in point Aa is by 4.4 cm (from 2.31 to -2.12) in Ba was 4.7 cm (from 2.52 to -2.27). The point C was reduced from +2.69 to -5.41 i.e. a reduction of >7cm. point Ap was reduced by 0.63 cm (from -2.21 to -2.84) and Bp was reduced by 2.58cm (from 0.92 to -2.50). The points Ap and Bp were reduced to approximately -3 position, which is our normal anatomical position of the points Ap and Bp (Table-4).

## DISCUSSION

The International Continence Society (ICS), the American Urogynecologic Society, and the Society of Gynecologic Surgeons published a consensus document in 1996 to describing an objective system to describe female pelvic organ prolapse, which was called the Pelvic Organ Prolapse Quantification system (POP-Q) [14].

In a study by Yuvaraj TP et al average pre-operative scoring was Aa +1.7, Ba +3.5, C +4, gh 5cm, pb 2, tvl 9cm, Ap +0.5cm, Bp +2.2cm, D +4cm and average post-operative score was Aa -2.9cm, Ba -3cm, C -6cm, gh 3cm, pb 4.2cm, tvl 7cm, Ap -3cm, Bp -2.9cm, D -6. [4]

Standardization subcommittee of the international continent society created the POPQ system in 1996. [4]

Excellent inter and intra observer reliability has been noted [6]. it has been used for longitudinal follow up in a population with prolapse [7]. Although initially it may take more time to record data in grid but with repeated use of the

POP-Q system the time decreases <sup>[2]</sup>. Another advantage of POP Q assessment is good reproducibility when different doctors do the assessment. This makes it easy to compare the results of different clinical studies.

Another study suggested that the prolapse becomes symptomatic if it descends lower than a level 0.5 cm above the hymen ( $\geq$ Stage 2 POP-Q) <sup>[11]</sup>.

Genital hiatus size is associated with and predictive of apical vaginal support loss. <sup>[12, 13]</sup> These factors need to be taken in to consideration when diagnosing and offering treatment options to women with prolapse.

This system does not identify unilateral or asymmetric defect. In 2006 this system was used by 40% of members of ICS and AUGS. There has been development of POPQ simplified system with similar points but only 4 (Aa, Ba, C, D) instead of 9 points. Inter and intra observer reliability of both systems showed good correlation. <sup>[9]</sup>

## CONCLUSION

The system relies on specific measurements of defined points in the midline of the vaginal wall. The fixed reference point used for measurement is hymenal ring (zero point). Surgeon can evaluate anatomical correction of prolapse immediately after hysterectomy and compare with preoperative score. As shown in our study, anatomical correction after vaginal hysterectomy can be evaluated in an objective manner. Different surgeons can compare their results for anatomical correction.

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