CORRELATION OF RECTOCOELE SYMPTOMATOLOGY WITH PELVIC ORGAN PROLAPSE QUANTIFICATION MEASUREMENT

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ABSTRACT

BACKGROUND
The newly introduced pelvic organ prolapse quantification (POPQ) classification by International Continence Society [ICS in 1996] has been found to be definitely superior to old classification. The main difference between old and new classification is that the new classification is able to give us accurate measurement in cm as opposed to old classification which was vague, nonspecific and inaccurate. Obviously, POPQ classification is much useful in academic and research studies because we are able to apply test of statistical significance due to specific measurement in POPQ staging. In this study, we are focusing on one aspect of POP that is rectocoele where we will study about symptomatic relations of the rectocoele with the POPQ measurement.
Objective of this study is to evaluate symptoms of rectocoele in relation to POPQ measurement.

MATERIALS AND METHODS
This is a prospective study of 100 patients coming to our hospital with finding suggestive of rectocoele symptoms and signs. Details of symptomatology was studied with measurement of posterior vaginal wall prolapse in cm. All the data is collected and analysed to know about the statistical significance of the various measurements.

RESULTS
In our study, we found that the symptoms of rectocoele are correlated with POPQ measurements and found to be statistically significant showing increased severity as the measurement of POPQ component increases.

CONCLUSION
Our study has been possible only due to POPQ classification measurement which has been specifically designed for the purpose of research where specific and accurate findings are required.

KEYWORDS
Pelvic Organ Prolapse (POP), Pelvic Organ Prolapse Quantification (POPQ), Rectocoele, Symptomatology, Simplified Pelvic Organ Prolapse Scoring System, Manual Correction of Rectocoele.

BACKGROUND
A rectocoele is an outpocketing of the anterior rectal and posterior vaginal wall into the lumen of the vagina.[1] Some rectocoeles may be asymptomatic whereas others may cause symptoms of incomplete bowel emptying, vaginal mass, pain and pressure.[2] The genital prolapse is age old entity and has been described in oldest documented medical literature like Egyptian papyri [Kahun papyri circa 1835 BCE]. In fact, it is the most common problem found in the patient attending gynaecology. POP is defined as downward displacement of uterus, cervix and vaginal wall with surrounding structures like bladder, urethra, bowel and rectum from their normal anatomical positions and in severe cases, patient will complain of mass coming out of vagina because of protrusion of structure outside the introitus.

The incidence of rectocoeles is 20-80% in the general population and is thought to be increasing.[3] It is estimated to affect approximately 50% of parous women. POP markedly affects a patient's quality of life.[4]

The other structures apart from genital organs are most commonly cystocoeles, rectocoeles, enterocoeles and urethrocoeles; reflecting displacement of the bladder, rectum, small bowel, and urethra respectively; resulting from failure of the endopelvic connective tissue, levator ani muscular support or both.

Rectocoeles result from defects in the integrity of the rectovaginal septum and herniation of the rectal wall into the vaginal lumen.[5] It results from weakness in the muscular wall of the rectum and the paravaginal musculoconnective tissue, which holds the rectum in place. Pelvic organ prolapse is a bulge or protrusion of pelvic organs and their associated vaginal segments into or through the vagina.

Classification

Various classifications have been described. According to one scheme, three degrees of uterine descent are recognised.

First Degree

Descent of the uterus but the cervix remains within the introitus.

Second Degree

Descent to the extent that the cervix projects through the vulva when the woman is straining or standing.

Third Degree

Complete procidentia or general prolapse: The entire uterus prolapses outside the vulva. The whole vagina or at least the whole of its anterior wall is everted.

In Shaw's classification, descent is classified into four degrees – the first degree remains the same as above, but second degree is one where the cervix descends to the level of the introitus; the third when it projects through the vulva; and the fourth degree is complete procidentia.

Baden's system of grading is similar to Shaw's but uses the hymen as a reference point. Each component is graded from 0 to 4 with the patient straining.

Urethrocoele, Cystocoele, Prolapse, Rectocoele

0   Normal.
1   Descent to halfway to hymen.
2   Progression to hymen.
3   Progression halfway through hymen.
4   Maximal progression through hymen.

Enterocoele

0   Normal. Maximum of 2 cm of cul-de-sac between posterior cervix and rectum.
1   Herniation of cul-de-sac to one-fourth of distance to hymen.
2   Herniation to two-fourths of distance towards hymen.
3   Herniation to three-fourths of distance towards hymen.
4   Herniation to hymen.

Chronic Perineal Laceration

0   Normal (no more than hymenal laceration).
1   Involvement of anterior half of perineal body.
2   Involvement of perineal body but not anal sphincter.
3   Involvement including anal sphincter.
4   Involvement including anal mucosa.

(However, these systems do not provide accurate quantification for scientific comparison, lack reproducibility and specificity and may not accurately describe the structures associated with the sites of prolapse). To overcome the lacunae in above classification, the International Continence Society has therefore approved a new system, the Pelvic Organ Prolapse Quantification (POPQ) staging system, which measures in centimetres the positions of 9 sites on the vagina and perineal body in relation to the hymen. (Figure 1 and 2).

These 9 Sites are as follows

Aa- Located 3 cm proximal to the urethral meatus on the anterior vaginal wall;

Ba- The most distal position of the upper anterior wall;
C-   The most distal edge of the cervix or vaginal cuff;
D-   The location of the posterior vaginal fornix;
Ap- Located 3 cm proximal to the hymen on the posterior vaginal wall;
Bp- The most distal position of the upper portion of the posterior vaginal wall.
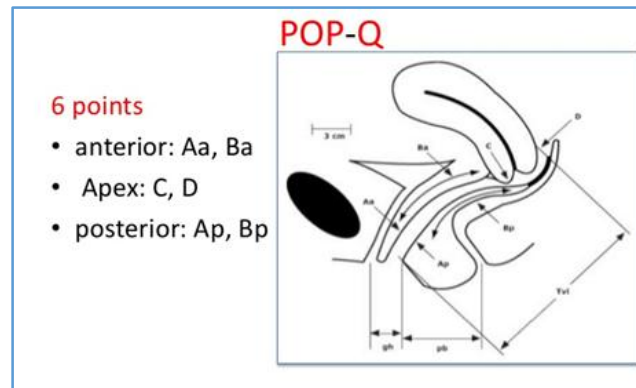

Figure 1

In addition, the diameter of the genital hiatus (gh), width of the perineal body (pb), and the total vaginal length (tvl) are measured and recorded on a grid form (Fig 2). A final prolapse stage from 0 to 4 can be assigned according the severity of the greatest degree of prolapse.
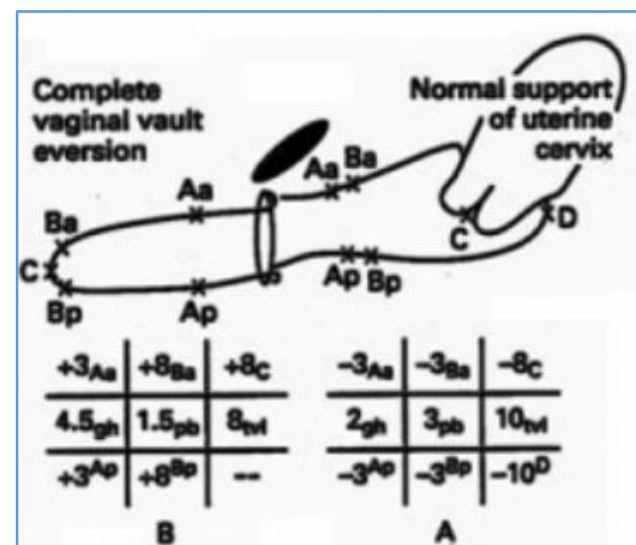

Figure 2

It is important to recognise that these measurements can change according to the position of the patient e.g. standing or lithotomy and by insertion of a speculum. It is also important to mention whether the patient was straining or whether traction was applied. Measurements at points gh and pb are completed first. A speculum is then placed in the vagina to allow introduction of a spatula and measurement of tvl. Points C and D are next measured during maximal Valsalva effort. Lastly, points Aa, Ba, Ap and Bp are measured.[6] The new classification has been prepared and simplified Pelvic Organ Prolapse Scoring system to make the things simple.[7] However, they have specifically mentioned that it is not useful for research purpose for which the

standard POP classification is recommended, so we have used the standard classification.

Our study is mainly focusing on rectocoele. Although rectocoele is common, associated symptoms are widely variable. Rectocoele results from defects in the integrity of rectovaginal septum and herniation of rectal wall into the vaginal lumen. According to the level of location of weakness in recto-vaginal septum, it can be classified as proximal [high], medial [mid-vaginal] and distal [low].

In some cases, the perineal body may become distended and lose its bulk leading to a perineocoele which can be only diagnosed on digital rectal examination.

Aetiology

Rectocoeles were previously thought to be a condition affecting only multiparous women. More recently, rectocoeles and enterocoeles were noted to occur in approximately 40% asymptomatic parous women.[8] Sharvon and Colleagues performed defecography on healthy, young, nulliparous, asymptomatic volunteers noting 17 of 21 women had small or moderate-sized rectocoeles.[9] Rectocoele and other forms of POP are the result of women attaining an erect bipedal posture. Aetiologically, most cases are the result of vaginal childbirth and chronic increases in intra-abdominal pressure [such as chronic constipation]. In some patients, rectocoele is thought to develop as a result of congenital or inherited weaknesses within the pelvic support system.

Clinical Presentation

A common complaint is constipation, which may occur in 75% of women with rectocoeles. Patients may complain of incomplete rectal emptying, a sense of rectal pressure, or a vaginal bulge.[10] Vaginal manipulation is sometimes necessary to facilitate defecation.[11]

Anatomy

As rectocoele is totally related to posterior vaginal wall, to have basic understanding, one must be clear about supports of vagina. The supports of vagina are found to be as three levels due to which vagina is stabilised. Superiorly, the vaginal apical endopelvic fascia is attached to the cardinal-uterosacral ligament complex. Laterally, the endopelvic fascia is connected to the arcus tendineus fasciae pelvis, with the lateral posterior vagina attaching to the fascia overlying the levator ani muscles. Inferiorly, the lower, posterior vagina connects to the perineal body.[12]

The anterior wall of the rectum and the posterior vaginal wall are fused for approximately 3 to 4 cm into the vagina. Evaluation of posterior vaginal wall defects requires not only an anatomical description of the prolapse, but also correlation of any functional derangements that may exist. Evaluation may include defecography, bowel transit studies, ultrasound and magnetic resonance imaging.[13] Defecography is recommended as a helpful diagnostic tool in the work-up of patients with posterior vaginal wall prolapse if surgical repair is considered.[14]

MATERIALS AND METHODS

This was a single institution based, prospective and observational study in which permission of ethical committee and informed consent of the patient for participation of study were taken.

The detail genital examination was done after emptying bladder in lithotomy position by using a standard POPQ technique with the help of POPQ stick showing measurement in cm as shown in figure 3. At the same time, the grade of prolapse was noted according to previous classification.

Figure 3

In our study, we included 100 patients coming to our obstetrics and gynaecology OPD in our institution.

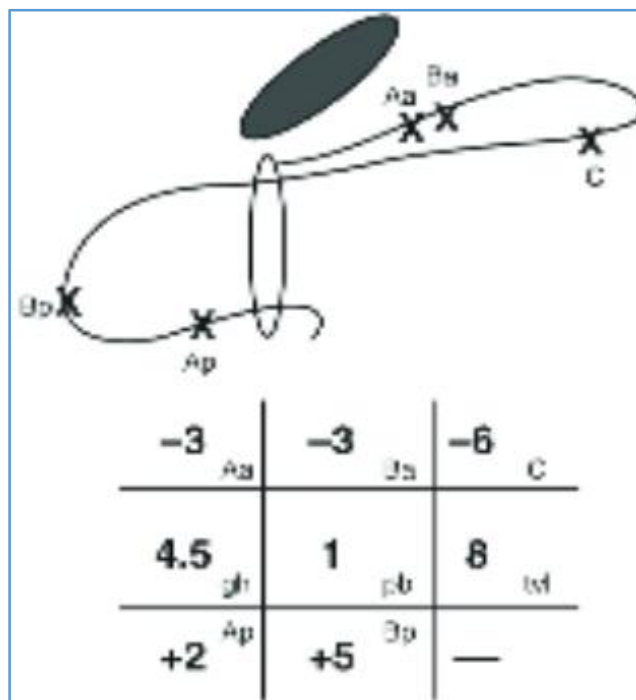Our study was specifically focusing on the rectocoele symptomatology as seen in figure 4.

Figure 4

Depending on the level of weakness in the support of the posterior vaginal wall, rectocoele can be three types – high, mid and low (Figure 4) as the posterior vaginal wall prolapse at low level can have mixed contents that is anal canal and rectum which is called as ano-rectocoele. Similarly, herniation through perineum can also occur which is called as perineocoele. Due the this anatomical variation, presentation of the symptoms can be different from typical rectocoele shown in figure no. 3 which occurs through mid-vaginal portion as seen in this figure 5, so we have excluded the patients of ano-rectocoele and perineocoele and taken displacement of point Bp for the comparison of symptoms. Few studies which have been done on this topic have also considered the same things.[15]
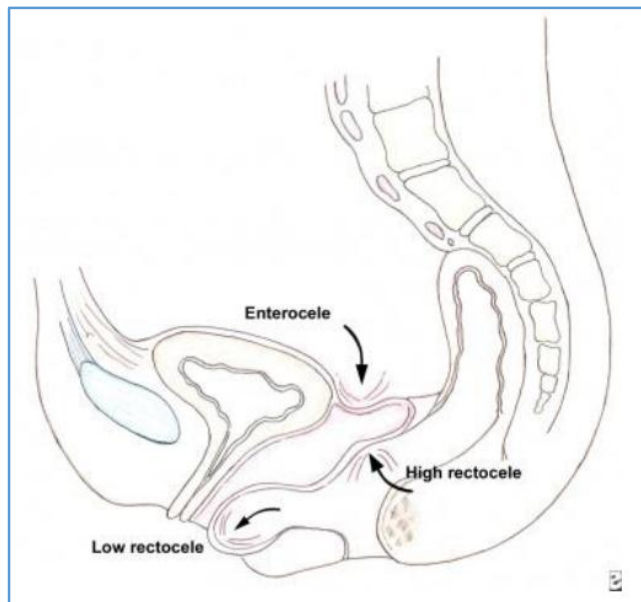
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Figure 5

RESULTS

Complaints	Number of Cases	Percentage
Something coming out of vagina (bulge)	28	28
Constipation	50	50
Manual correction of rectocoele	23	23
Asymptomatic	35	35
Table 1. Analysis of Rectocoele Complaints		

(Some patients having more than one symptom).

Constipation was found to be 50% in our study. Actually, it can be etiological factor of prolapse or prolapse can cause constipation due to the impaction of faecal material. The complaint of something coming out of vagina was found in 28 patients in whom Bp was +1 and more suggesting that the threshold for this complaint is Bp at +1.

Statistical results and details about the symptoms have been given in following tables.

POPQ	Bp (-3)	Bp (-2)	Bp (-1)	Bp (0)	Bp (+1)	Bp (+2 & More)	Total
Consti pation	1	2	6	13	19	9	50

POPQ – 2a	Bp (-3)	Bp (-2)	Bp (-1)
No. of pts.	1	2	6
Percentage	33.33	33.33	60

POPQ – 2b	Bp(0)	Bp(+1)	Bp(+2) or More
No. of pts.	13	19	9
Percentage	86.66	90	90
Table 2. Analysis of Patients with Symptoms of Constipation with POPQ component Bp			

Fisher Exact probability test: p value: 0.0428 significant p value: <0.05.

Percentage of patients increases along with increase in value of POPQ component Bp.

Table suggests that p value is statistically significant.
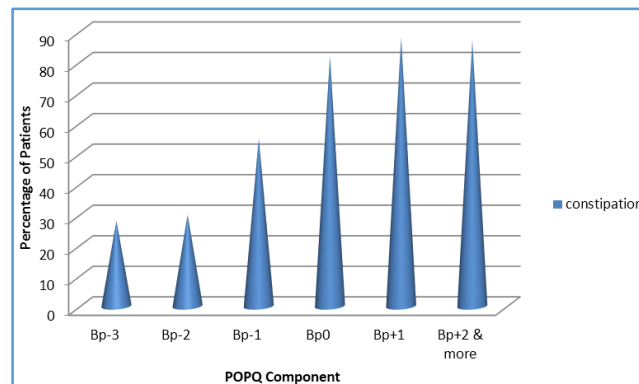
Graph 1: Analysis of Patients with Symptoms of Constipation with POPQ component Bp

POPQ	Bp (-3)	Bp (-2)	Bp (-1)	Bp (0)	Bp (+1)	Bp (+2 & More)	Total
Manual correction in rectocoele	0	0	3	5	10	5	23

POPQ – 3a	Bp (-3)	Bp (-2)	Bp (-1)
No. of pts.	0	0	3
Percentage	0	0	30

| POPQ – 3b	Bp (0)	Bp (+1)	Bp (+2 or more)
No. of pts.	5	10	5
Percentage	33.33	47.62	50
Table 3. Relation between POPQ component Bp and Manual correction in Rectocoele			

Fisher Exact probability test: p value: 0.03727, Significant, p value:<0.05.

Percentage of patients increases along with increase in value of POPQ component Bp.

Table 3 shows that manual correction is required more as POPQ component Bp increases.

P value suggests it is statistically significant.
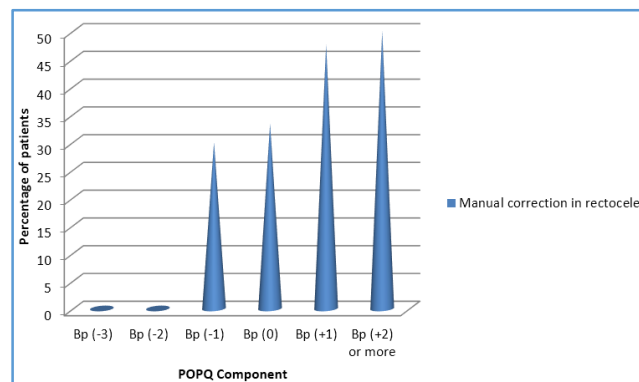
Graph 2. Relation between POPQ component and Manual correction in Rectocoele

In our study, we are focusing on three symptoms that is something coming out of vagina (bulge), constipation and manual correction of rectocoele.

DISCUSSION
Before the invention of POPQ classification, it was vague description of the symptoms, correlation with the size of rectocoele like large rectocoele causes more problem as opposed to the small rectocoele or there is no correlation of symptoms with the size. Nothing was defined about the dimensions of large and small rectocoeles. According to the classification, we are able to take accurate measurement with the help of graduated stick having marking in cm, so that we have been able to know the extent of severity of the symptoms in relation to measurement. Our data analysis has been shown clear-cut correlation about symptomatology and POPQ measurement due to same. We have been able to apply test of statistical significance to confirm our finding and able to come to definite conclusion. Our study is showing increase in severity along with the increase in measurement. We have applied Fisher test for the same.

This is the purpose of innovative new classification which is very specific and accurate and helpful for research purpose and also got other advantages like elimination of personal errors in the inter-observational study. It is also helpful in evaluation of patients in post-operative period.

We had 100 patients for above study, it shows that 50% patients had complaints of constipation while 23% patients had complaints of requirement of manual correction to pass stool. Some had more than one complaint.

By Fisher Exact Probability Test, we found p value is statistically significant.

This type of study which correlates clinically with measurement of prolapse in centimetres as per POPQ classification is possible by POPQ method only and not possible by old methods.

CONCLUSION
It is clearly seen from our study that the severity of symptoms of rectocoele are increasing with POPQ measurement. It should also be noted that the previous classifications were nonspecific and inaccurate due to lack of measurement in cm which is a major correction in the POPQ classification. We think that every gynaecologist should practise prolapse status by POPQ measurement and its record should be maintained. More studies on large sample should be done before coming to final conclusion.

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