



ROLE OF BENJAMIN SIGN AS A NONINVASIVE TOOL FOR DIAGNOSIS OF ENDOMETRIOSIS

Gynecology

Dr. Shikha Sachan*

MS, Obs and Gyne, Assistant Professor Department of Obs and Gyne Institute of Medical Sciences, Banaras Hindu University, Varanasi * Corresponding Author

Dr. Sheela Khandelwal

MS, Obs and Gyne Institute of Medical Sciences, Banaras Hindu University, Varanasi

Prof. Anuradha Khanna

MS, Obs and Gyne, Professor Department of Obs and Gyne Institute of Medical Sciences, Banaras Hindu University, Varanasi

ABSTRACT

Aim: Endometriosis in adolescent girls has severe morbidity and late sequelae. Our aim was to find out the role of a noninvasive tool like Benjamin Sign for its diagnosis.

Method: Adolescent and young girl 10-24 years of age with complaint of pelvic pain, dysmenorrhea, menstrual irregularity, infertility attending the female Out Patient Department of S.S.H., B.H.U. from Sept. 2008 to June 2010 were selected. Basal Body Temperature charting was done from D22 to the end of the menstruation. Laparoscopy was done in suspected cases.

Results: Total 52 patients were evaluated; laparoscopy was done in 35 cases on the basis of Benjamin sign positivity, strong clinical suspicion & ultrasound diagnosis. Benjamin sign was positive in 93.3% cases of endometriosis (positive predictive value). Sensitivity was 96.55%. Specificity was 66.66%.

Conclusion: Benjamin sign as a non invasive cost effective tool which can be evaluated for making of diagnosis of endometriosis.

KEYWORDS

Adolescent girls, **Endometriosis**, Benjamin sign

INTRODUCTION:

Endometriosis is an enigmatic disease which puzzles doctors all over the world with its undefined clear cut etiology, symptoms which vary from innocuous heaviness in lower abdomen to incapacitating pelvic pain and dysmenorrhea, and can result in multiple operations and infertility, having a significant detrimental impact on patients' quality of life and substantial morbidity. Endometriosis is also peculiar owing to the fact the variety of morphological lesions credited to the disease and the fact that patients symptom do not match its severity with many patients being asymptomatic. Endometriosis is better known as a syndrome that starts around the prepubertal age with youngest known case reported at eight years of age and flourishes after menarche with symptoms progressing in intensity throughout years. The disease still has unconquerable pathology, which though was attempted to be defined a century ago by Rockitansky has remained an enigma with etiology not clearly defined till date.

By definition, endometriosis is the presence and growth of the glands and stroma of the lining of the uterus in an aberrant or heterotopic location. The uterine cavity is lined by endometrial cells, which are under the influence of female hormones. Endometrial cells deposited in areas outside the uterus continue to be influenced by these hormonal changes and respond similarly as do these cells found inside the uterus. The overall true prevalence of endometriosis is unknown, primarily because surgery is the only reliable method for diagnosis and generally is not performed on women without symptoms or physical findings that strongly suggest the possibility; estimates vary by diagnosis. As such endometriosis diagnosis requires the identification of 2 entities on i.e. presence of endometrial glands and stroma in ectopic places.

Therefore, a broader, clinical definition based on complaints of pelvic pain or infertility as been adopted for many research protocols but using this methodology potentially confounds the findings because of inherent selection bias when indentifying appropriate control group and because many cases are asymptomatic, in addition the precise timing or onset of endometriosis is generally not known. Thus, the determination of incidence of the disease is made extremely difficult.

Asymptomatic women undergoing tubal ligation (women of proven fertility), the prevalence of endometriosis ranges from 6% - 7%⁽¹⁾ and in women of reproductive age the total incidence varies from 12-32%, infertile women may have incidence high ranging from 9-50%⁽²⁾ and it may be approximately 50% among adolescent suffering from chronic pelvic pain or dysmenorrhea.

Another dilemma of diagnosing endometriosis is that Laparoscopy is the gold standard for diagnosis. Being an invasive procedure it is performed only on patient with strong clinical suspicion or after sonographic diagnosis. So there is a high chance of missing nascent disease. This jeopardizes the gynecological and obstetrical future of many young girls and hence there is a need for noninvasive tool for diagnosis which may be used singularly or in combination with other tests

MATERIAL & METHOD:

Fifty two adolescent and young girls from 10-24 years of age with complaint of pelvic pain, dysmenorrhea, menstrual irregularity, infertility, dyspareunia, (during menstruation dysuria and dyschezia) attending the Female OPD of S.S.H., B.H.U. from Sept. 2008 to June 2010 were selected. Detailed history was taken and clinical examination was done. USG was also performed in the patients. Basal Body Temperature charting was done from D₂₂ to the end of the menstruation. Laparoscopy was done in 35 suspected cases on the basis of history, examination, investigations and who gave consent for laparoscopy.

INCLUSION CRITERIA:

- Young females of age group 10 -24 years who presented with symptoms and signs suggestive of endometriosis.

EXCLUSION CRITERIA:

- patient with inflammatory bowel disease,
- pelvic inflammatory disease,
- urinary tract infection,
- functional cyst and
- Irritable bowel syndrome

METHODOLOGY: Normally, the basal body temperature remains usually low in whole of the menstruation period, may be due to the effect of decrease in concentration of estrogen and progesterone hormone. Whereas, in adolescent girl with endometriosis basal body temperature remains high during the menstrual flow or, has up and downs during the same and falls only at the end of it, as described by Dr. Benjamin first as a sign of endometriosis is known as "BENJAMIN SIGN".

RESULTS:

Total 52 patients were evaluated for endometriosis; laparoscopy was done in 35 cases on the basis of Benjamin sign positivity, strong clinical suspicion & ultrasound diagnosis. Overall an incidence of endometriosis was found to be 57.71%. Max prevalence was found in age group (15 to 19) -93.8%.

TABLE 1: Distribution of patients in to different groups according to diagnosis who presented with complaints of pelvic pain, dysmenorrhea, dyspareunia, and infertility:

Group	No.	Percentage
Endometriosis suspected	35	67.3
PID and inflammatory bowel disease	8	15.4
Urinary tract infection	3	5.80
Functional cyst	5	9.60
Irritable bowel syndrome	1	1.92

Table 1 shows, that out of 52 patients with suspected endometriosis 35(67.3%) patients remained suspicious and were further investigated by laparoscopy. Remaining cases were of PID and inflammatory bowel disease in 8(15.3%), functional cyst in 5 (9.6%), urinary tract infection in 2(3.9%), irritable bowel syndrome in 1(1.92%).

TABLE 2: Distribution of cases according to symptoms

Symptoms	With endometriosis		Without endometriosis	
	No.	%	No.	%
Dysmenorrhea	24	80.0	3	60.0
Pelvic pain	16	53.3	2	40.0
Dysuria	6	20.0	1	20.0
Dyschezia	4	13.3	1	20.0
Dyspareunia	2	6.70	2	40.0
Nausea vomiting	9	30.0	2	40.0
Bloating	18	60.0	1	20.0
Infertility	5	16.7	1	20.0

Table 2 : shows that , dysmenorrhea was the most common symptom seen in 24(80%) of the patients with endometriosis followed by bloating during menstruation in 18(60%), pelvic pain 16(53.3%), nausea vomiting during menstruation in 9(30%), dysuria in (20%), dyschezia in 4(13.3%), infertility in 5(16.7%) and dyspareunia in 2(6.70%).

Similarly in patients without endometriosis dysmenorrhea was most common symptom seen in 3(60.0%), followed by pelvic pain, nausea vomiting during menstruation, dyspareunia in 2(40.0%), dysuria, dyschezia, bloating and infertility in 1(20.0%) patients

TABLE 3 :Distribution of patients according to result of BBT charting.

Results of BBT charting	No.	Percentage
Benjamin sign positive	29	82.9
Benjamin sign negative	6	17.1
Total	35	100

Table :3 shows that, out of 35 patients suspected of endometriosis who had done BBT charting, 29(82.9%) were positive, and 6 (17.1%) were negative for Benjamin sign.

TABLE :4 correlation of Benjamin sign with endometriosis on laparoscopy.

BBT charting	Endometriosis present		Endometriosis absent	
	No.	%	No.	%
Benjamin sign positive	28	93.3	1	20
Benjamin sign negative	2	6.70	4	80
Total	30	100	5	100

Table 4, shows that, out of 29 patients who were Benjamin sign positive; endometriosis was found in 28(93.3%) patients. Whereas, among 6 patients who were negative for Benjamin sign; endometriosis was present in 2(33.3%).

DISCUSSION:

Endometriosis is a perplexing disorder which increases in severity over time coupled with the fact that it needs an invasive procedure usually for its diagnosis. The disease in early stages is fairly asymptomatic or with vague symptoms which are often ignored. Young girls with dysmenorrhea, pelvic pain, heaviness in lower abdomen and dysuria, dyschezia, dyspareunia are frequently given analgesics for relief, the disease is usually investigated and reported when infertility sets in. Endometriosis is a disorder which causes significant morbidity to patient sometimes incapacitating their normal social life, hence the need for a tool for early diagnosis of endometriosis in young girls and thus preserving their future obstetrical and gynecological future

In our study we found incidence of endometriosis in patients of suspected group (those with presenting complaints such pelvic pain, dysmenorrhea, dyspareunia, during menstruation dysuria and dyschezia) to be 57.71% rest of the cases turned out to be of PID and inflammatory bowel disease in 8(15.3%) patients, followed by functional cyst in 5(9.6%), urinary tract infection in 2(3.9%), irritable bowel syndrome in 1(1.92%). We also found that dysmenorrhea was found as a common symptom in both the groups and there was not much difference between incidence of other symptoms in both the group. This data underlies the fact that endometriosis can not be diagnosed with a specific set of symptoms and hence the need for other non invasive diagnostic tests

Basal body temperature is the core temperature of body during rest. During the normal menstrual cycle, there is a significant rise in temperature, after the luteinizing hormone peak, coinciding with a rise in peripheral levels of progesterone. The elevation is normally sustained for 11 to 16 days and then drops at the time of subsequent menstruation. Documentation of a shift in basal body temperature (BBT) from a constant lower level during the follicular phase to a higher level in the luteal phase is a useful means of detecting ovulation. In endometriosis this decline of temperature during menstruation is not seen and this was described by Dr Benjamin as Benjamin sign⁽¹⁾

In endometriosis this non decline of temperature may be attributed to inflammation induced by collected blood at endometriotic site during menstruation. Endometriosis is also considered as an estrogen dependent inflammatory disease.⁽⁴⁾ Inflammation and estrogen are lined in a positive feedback cycle which enhances the expression of inflammatory cytokines, and local estrogen production in ectopic endometriosis lesions⁽⁵⁾

- Swolin and Skogsberg⁽²⁾ have suggested an association between a postmenstrual late decline in temperature and the presence of pelvic endometriosis; in 11 cases diagnosed with endometriosis, 9 exhibited a late decline in BBT. However, no systematic study of this phenomenon with controls has been reported. While Chai et al in 1990 have reported increase in BBT in 12 out of 18 endometriosis cases.⁽³⁾ In our study Strong correlation has been noted between clinical suspicion and BBT charting where, Benjamin sign was positive in 82.9%(29/35) of suspected cases (well comparable with prof. onetto et al 2001)⁽¹⁾ Positive predictive value of Benjamin sign in endometriosis - 93.3%(28/30). Sensitivity - 96.55%(28/29) Specificity- 66.6% (4/6). This proves that Benjamin sign can have a role in non invasive diagnosis of endometriosis specially in young girls who have to undergo invasive procedures for diagnosis.

REFERENCES

- Onetto B. E. El uso del signo de Benjamín en el diagnóstico precoz de la endometriosis. Soc Chil Obstet Ginecol Infant Adolesc. 1997;4(2):11-4.
- Swolin K, Skogsberg K. Endometriosis and Basal Body Temperature: A new and simple diagnostic method Preliminary report. Acta Obstetrica et Gynecologica Scandinavica .1985;64:617.
- Chai Sungji B.S., Robert A., Wild M.D. Basal body temperature and endometriosis. Fertility and Sterility. 1990; 54(6):1028-31
- Fuentes A, Escalona J, Céspedes P, Espinoza A. Prevalencia de la endometriosis en mujeres sometidas a esterilización quirúrgica laparoscópica en un hospital de Santiago de Chile. Cecilia Johnson Rev Med Chil. 2014; 142(1): 16-19.
- Wuab M H, Hsiaob K Y, Tsai S J. Endometriosis and possible inflammation markers. Gynecology and Minimally Invasive Therapy .2015;4: 61.