

Rule of Rectal Manometry in Late Management of Fecal Incontinence in Patients Treated By Posterior Sagittal Anorectoplasty

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Abstract: Eleven patients with proximal types of imperforated anus (mean age 15 Y) were evaluated clinically by a single examiner and by rectal manometric studies. All were males with problems related to fecal continence. It was found that local examination alone is enough to put a plan for further management with no need for Manometric evaluation.

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1. Introduction

Patients underwent repair of imperforate anus may suffer from variable degree of fecal incontinence depending on the type of anomaly and the operative approach. Low anomalies treated via the Pena's posterior sagittal approach usually had better continence. In normal children, voluntary urinary and fecal control achieved after training, by the age of 3-4 years, therefore assessment patients treated for their imperforate anus, advisable to be done beyond this age¹. Post operative assessment is directed towards assessing the strength of sphincter muscles, site of new anus and quality of life. The capacity of the sphincters and its distribution are evaluated by rectal manometry, electromyography, endosonography and magnetic resonance imaging,² while quality of life assessed by direct interviewing. Although not universally agreed, several scoring systems were described to clinically evaluate the results of treatment like; the Kelly's and the pena's (Krikckenbeck) scoring system.³ In this study we reviewed a group of patients with proximal types, treated by Pena's approach and had difficulties in fecal control.

Aim of the study

To determine the efficiency of clinical examination alone and wither there is role of ano-rectal manometry in the management of fecal incontinence in patients with proximal types of imperforate anus treated by posterior sagittal anorectoplasty (PSARP).

2. Material & Methods

Eleven male patients with different proximal types of imperforate anus, treated by Pena's PSARP and having defecation problems were evaluated by clinical examination and rectal manometry, their mean ages 15 years (range 7.5 to 28 years).The PSARP was done primarily in 9 cases, and as a secondary procedure in 2 patients. (Initially treated via

abdomino-perineal approach and had obvious mislocation of the rectum), 4 patients had recto-vesical fistula(R-V), 4 with recto-bulbar urethral fistula (R-U) and 3 cases had supra levator imperforate anus without fistula. The clinical examination was done by a single examiner, at least 2 hours from last the cleaning. It includes; the site of the neo-anus, presence of soiling and digital rectal assessment of the sphincters. A score was given to each item; 1 when the neo-anus is central, 0 if mislocated, a score of 1 for absence of soiling and 0 when soiling present. On Digital rectal examination; voluntary squeeze by the patient is given a score of 1 when it is tight grip, 0.5 when it is weak and 0 when there is the absence of griping. Rectal manometry was done with the catheter introduced 5 cm from muco-cutaneous junction. The resting pressure (RP), squeeze pressure(sq p) in mmHg are measured(The squeeze pressure measured twice and the average was taken),then the Recto Anal Inhibitory reflex (RAIR) recorded after inflating the balloon up to 25 ml of water. The manometric evaluation was given a score of 1 to each positive Resting rectal pressure, rise of squeeze pressure and presence of Recto Anal Inhibitory Reflex (RAIR) and a score of 0, in their absence. Table (1)

3. Results

Seven patients had obvious soiling, four with mislocated neo-anus. Voluntary anal grip was good in 2, weak in 7 and no voluntary finger grip in 2 patients. All patients had positive resting anal pressure of 27.4 mmHg (range 23-39.9) and positive rise of squeeze pressure of 52.4 mmHg (range 31- 72) with positive Recto Anal inhibitory Reflex(RAIR) in 2 patients (18%). In the 2 patients with no voluntary grip RP was 24.5 & 39.9 mmHg and their sq P 65 & 72 mmHg. In both patients the soiling was due to impacted feces, one with recto-vesical and the other had high imperforate anus without fistula.

No relation seen between the type of imperforate anus, clinical assessment and manometric studies. When our score applied, The best results was seen in

cases with recto-urethral fistula but there was no relation between the clinical and manometric score. (Table 2).

Table(1): Summary of the Clinical & Manometric Evaluation.

Demographic data				Clinical findings				Manometric findings			
NO	Sex	Age	Type	Soiling	R site	Vol grip	S	R P mmHg	Sq P mmHg	RAIR	S
1	M	8.5 y	R- v	+ 0	Ecc lt 0	Weak 0.5	0.5	26.5 1	37 1	$\bar{0}$	2
2	M	9.5 y	R-v	+ 0	Ecc dn 0	Non 0	0	24.5 1	65 1	+ 1	3
3	M	8 y	R-v	+ 0	Cent 1	Weak 0.5	1.5	19.2 1	46.7 1	$\bar{0}$	2
4	M	9y	R-u	+ 0	Cent 1	Weak 0.5	1.5	30.9 1	50 1	$\bar{0}$	2
5	M	7.5y	R-u	$\bar{1}$	Cent 1	Weak 0.5	2.5	15.3 1	40 1	$\bar{0}$	2
6	M	11y	H,no F	+ 0	Cent 1	Weak 0.5	1.5	36.8 1	50.3 1	+ 1	3
7	M	17 y	H,no f	$\bar{1}$	Ecc up 0	Good 1	2	39.1 1	49 1	$\bar{0}$	2
8	M	21y	R-u	+ 0	Cent 1	Weak 0.5	1.5	25.4 1	70.6 1	$\bar{0}$	2
9	M	19y	H,no f	+ 0	Cent 1	Non 0	1	39.9 1	72 1	$\bar{0}$	2
10	M	26y	R-u	$\bar{1}$	Ecc up 0	Good 1	2	21.3 1	31 1	$\bar{0}$	2
11	M	28y	R-v	$\bar{1}$	Cent 1	Weak 0.5	2.5	23 1	65 1	$\bar{0}$	2

R site : Rectal site, Vol grip ; Voluntary grip, RP : Resting pressure, Sq P : Squeeze Pressure,

S: score, RAIR : Recto Anal Inhibitory Reflex, R-V Recto vesical fistula, R-U : Recto urethral fistula, H no f : High without fistula, Ecc lt : Eccentric to left of patient, ECC dn ; Eccentric downward, Ecc up : Eccentric upward, Cent : central

Table (2) The Score results of Clinical & Manometric evaluation.

Type	NO. of cases	Mean clinical score	Mean Manometric score
R-U	4	1.87	2
R-V	4	1.125	2.25
H.no fist	3	1.5	2.3

R-U: recto Urethral Fistula, R-V: Recto Vesical Fistula, H.no Fist : High type without Fistula

4. Discussion

Imperforate anus is a form of ano-rectal malformations, it occur in 2-2.5 per 10,000 live births, with significant variations in the prevalence between regions throughout the world.⁴ It occur in a range of spectrum and classified into different types (Krikinbeck classification).⁵ Due to lack of national registry of birth defects, the incidence in our society is not known but it has been reported in association with other anomalies.⁶⁻⁸ The management of these abnormalities starts from the neonatal period in a

single or multiple stages. The principal stage is the rectal pull through, with the widely accepted approach is the posterior sagittal, described by Pena' in 1982.⁹⁻¹¹ Although several techniques described, fecal continence and voluntary bowel control, markedly improved after the introduction of this approach.^{12,13}

Complications like; constipation, fecal soiling, mucosal prolapse and mislocation of the neo-anus are known to occur, particularly in high types.^{14,15} The presence of sacral anomalies may further enhance these complications.^{16,17} Fecal soiling could be either a true incontinence due to sphincter muscle hypoplasia, or false incontinence as a result of constipation, the

difference between the two, can be done through local examination (impacted feces), contrast enema (hypo motile colon), endosonography and rectal manometry¹⁸⁻²⁰. Quality of life and social acceptance are highly affected by disturbance in fecal control. Different scoring systems were described for assessment of defecation problems and quality of life, like the Kelly's & Krinckenbeck (Pena's score) for small children and the Bai score for age 8-16 Y. The scores on these systems are based mainly on patients and parents counselling. The Kelly's score includes digital assessment of the sphincter muscles strength and rectal manometry, included in Holschneider scoring system. local examination and the site of the neo-anus was not included in these systems. The functional outcome score can be considered as an index of management of defecation disorders in children with anorectal malformation^{3,21}.

Colonic and rectal manometry is done for evaluation of patients with chronic constipation, it measures endo colonic and rectal pressure.²² Patients with ano-rectal malformation are known to have motility disorders which is segmental in low anomalies and more generalized in the high types.^{23,24}

Early post operative evaluation by ano-rectal manometry may give realistic information about the future continence so that a plan for further management can be started.²⁵⁻²⁷ The long-term functional outcome in children with anorectal malformations is significantly lower than normal controls, however it improves at adolescence with proper management of constipation that's why regular follow-ups are required for proper care.^{21,28,29}

In our patients, the resting and squeeze pressure were in the highest score according to Holschneider scoring system in spite of having defecation problems. Their age and having a common problem, would allow easy Personal counseling and local examination, this would eliminate the need for further assessment by a other methods, this was also suggested by Tsuji et al.³⁰

5. Conclusion

Local Clinical examination, by a single examiner may be adequate in evaluating and putting a plan for further management in patients with complications following PSARP.

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