

The importance of anorectal physiology tests in clinical diagnosis and treatment



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AIM: In this study, we aimed to convert subjective findings to objective findings and to determine the effect of anorectal physiology tests on the diagnosis and treatment of patients with defecatory complaints.

MATERIAL AND METHOD: Two hundred and forty patients who applied to the proctology unit between January 2015 and August 2017 were included in our study. The patients were divided into 3 groups based on their presentation complaints; Group 1: Obstructive defecation syndrome(ODS), Group 2: Peroperative except anal incontinence and control after sphincter repair, Group 3: Anal incontinence. Group 2 and Group 3 were divided into subgroups. The demographic data of the patients were retrospectively analyzed. The number of anorectal physiological tests in groups and the rates of referral to surgical or medical treatment were evaluated.

FINDINGS: Two hundred and forty patients were included in our study. The highest mean age was in Group 3 (46.2 ± 17.8) ($p: 0.356$) 43.3% of the patients in our study were female. Anorectal manometry was performed in all patients. Endoanal USG was most commonly performed in Group 2 (42.6%, $p: 0.013$), defecography in Group 1 (47.4%, $p: 0.0001$), and EMG in Group 3 (25.3%, $p: 0.001$). In Group 1, 33% of the patients with pathological defecography findings had surgical treatment ($p < 0.05$). In Group 2a, the rate of surgical treatment was higher in patients who underwent anal USG with anorectal manometry (25.6% vs 40%). In Group 3, the rate of surgical treatment was higher in patients who underwent anal ultrasound with manometry (1.9% vs 32.6% $p < 0.005$)

DISCUSSION: Anorectal physiological tests are important for accurate diagnosis and treatment planning. The combined use of anorectal physiological tests in anal incontinence groups increased the rate of referral to surgical treatment.

KEYWORDS: Anorectal physiology tests, Anal manometry, Anal incontinence

Introduction

Pelvic floor diseases and anal incontinence is a disease that causes isolation of the person from the social environment, adversely affects their intellectual life and has a high cost to the society, especially with the increasing incidence and accompanying diseases¹.

Especially with the introduction of anorectal physiological tests, a better understanding of the disease has been made

possible and it is easier to decide which procedures to select for patients who will undergo surgical repair¹.

In this study, we aimed to convert subjective findings to objective facts and to determine the effect of anorectal physiology tests on the diagnosis and treatment of patients.

Material and Method

Two hundred and forty patients who applied to the proctology unit between January 2015 and August 2017 were included in our study. 68/1 numbered, and 08.09.2017 dated approval was obtained from the Non-Interventional Clinical Research Ethics Committee of Çukurova University Faculty of Medicine.

The patients were divided into 3 groups based on their presentation complaints; Group 1: Obstructive defeca-

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tion syndrome (ODS), Group 2: Peroperative except anal incontinence and control after sphincter repair, Group 3: Anal incontinence. Group 2 and Group 3 were divided into subgroups. These were; Group 2a: Perioperative group except anal incontinence (anal fistula, anal fissure colostomy closure, rectocele, rectovaginal fistula, rectal prolapse), Group 2b: Control after sphincter repair, Group 3a: Anal incontinence neurogenic, Group 3b: Anal incontinence birth trauma and Group 3c: other anal incontinence.

The demographic data and arrival complaints of the patients were retrospectively analyzed from files and electronic records. Patients complained of tenesm and incontinence (major and minor incontinence). Involuntary leak of liquid-gas and gas was accepted as minor incontinence and involuntary leak of normal consistency stool was accepted as major incontinence. Distribution for each group was evaluated. Based on the physical examination of the patients, a pre-diagnosis and diagnosis of proctological disease was recorded.

Wexner scores of the patients were recorded in 3 groups ². In the rectal examination of the patients, the squeezing tones of the sphincters were recorded by 3 physicians before the manometric evaluation. Manometric evaluation was performed following rectal digital exam. It was accepted as decreased, normal or increased and this distribution was examined in 3 groups. Digital exam findings and manometric sphincter pressures were compared.

It was decided that necessary anorectal physiological tests would be performed in accordance with the existing physical examination findings with appropriate indication. The number of anorectal physiological tests in groups was evaluated.

OBSTRUCTIVE DEFECATION SYNDROME

In the ODS group, the effect of pathological findings in the defecography on the choice of treatment was investigated. In the ODS group, the effect of sphincter squeezing pressures on the choice of treatment was examined. The patients who did and did not undergo biofeedback were compared in terms of the pathology in their defecography. In the perioperative except anal incontinence group, it was investigated whether manometry accompanied by other examinations (USG) were effective in making a surgical treatment decision.

SPHINCTER REPAIR GROUP

In the control after sphincter repair group, the change in sphincter squeezing pressures compared to the preoperative values was analyzed by anal manometry.

ANAL INCONTINENCE GROUP

In the anal incontinence group, it was investigated whether manometry accompanied by other examinations

(USG, defecography, EMG) were effective in making a surgical treatment decision.

In the anal incontinence group, the incidence of sphincter defect detected in the USG of the patients with birth trauma history was examined. In group 3 patients who presented with anal incontinence, sphincter squeezing pressures on manometer and rate of sphincter defect detection on USG were examined. In the anal incontinence other group, the sphincter squeezing pressure values obtained by anal manometry was compared between the biofeedback recommended group and the non-biofeedback group. Sphincter squeezing pressure values were examined in manometric examinations of all patient groups who underwent EMG, those who had normal EMG results and those with pathological results.

STATISTICAL ANALYSIS

Data were analyzed using IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, N.Y., USA). Categorical measurements were summarized as numbers and percentages, and continuous measurements were summarized as mean and standard deviation (median and minimum-maximum where necessary). Chi Fisher test statistic was used to compare categorical variables. Kruskal Wallis test was used to compare the mean values between groups, Student T test was used for parameters showing normal distribution according to the number of variables, and Mann Whitney U test was used for parameters not showing normal distribution. Statistical significance was taken as 0.05 in all tests.

Results

240 patients were included in our study. The mean age distribution of the patients was 43.8 ± 19.1 in Group 1, 42.1 ± 17.1 in Group 2 and 46.2 ± 17.8 in Group 3 ($p: 0.356$). 43.3% of the patients in our study were female. The distribution of patients in the groups is shown in Table I.

TABLE I - Distribution of patients in groups

	n (%)
Group 1: ODS	38 (15,8)
Group 2a P.G.E.A.I	39 (16,3)
Group 2b A.S.R.	9 (3,8)
Group 3a A.I.N	39 (16,3)
Group 3b A.I.B.T	21 (8,8)
Group 3c: A.I.O	94 (39,2)

Group 1: ODS (Obstructive defecation syndrome); **Group 2:** Peroperative and postoperative; **Group 3:** Anal inkontinans, **Group 2a:** P.G.E.A.I (Perioperative group except anal incontinence); **Group 2b:** A.S.R. (Control group after sphincter repair); **Group 3a:** A.I.N (Anal incontinence neurogenic); **Group 3b:** A.I.B.T (Anal incontinence birth trauma); **Group 3c:** A.I.O (anal incontinence other)

TABLE II - Digital rectal exam findings in physical examination

		Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	p
Sphincter tone at digital rectal exam	Decreased	4 (10.5)	17 (35.4)	74 (48.4)	p: 0,0001
	Normal	22 (57.9)	22 (45.8)	55 (35.9)	
	Increased	12 (31.6)	9 (18.8)	24 (15.7)	

Group 1: ODS (Obstructive defecation syndrome); **Group 2:** Peroperative and postoperative; **Group 3:** Anal incontinence, **Group 2a:** P.G.E.A.I (Perioperative group except anal incontinence); **Group2b:** A.S.R. (Control group after sphincter repair); **Group 3a:** A.I.N (Anal incontinence neurogenic); **Group 3b:** A.I.B.T (Anal incontinence birth trauma); **Group 3c:** A.I.O (anal incontinence other)

TABLE III - Comparison of sphincter squeezing tone and anal manometric sphincter squeezing pressure values of patients

		Sphincter squeezing tones in rectal digital exam		
		Decreased n (%)	Normal n (%)	Increased n (%)
Squeezing Pressure	EAS Low	89,96.77	52,52.5	13,28.99
	Normal	3,3.3	32,32.3	15,33.3
	EAS High	0,0.0	15,15.2	17,37.8

Sphincter squeezing tone was found to be decreased by 10.5% in Group 1, decreased by 35.4% in Group 2 and decreased by 48.4% in Group 3 (p. 0.0001). Digital rectal examination findings are shown in Table II.

When the comparison of sphincter squeezing tonus determined by digital rectal examination and anal manometric sphincter squeezing pressure values were examined, it was decreased in 96.7% of patients who had decreased squeezing tone, it was normal in 32.3% of patients who had normal squeezing tone and it was increased in 37.8% of the patients who had increased squeezing tone in digital rectal examination. This is shown in Table III.

When Wexner scoring system was applied to patients in Group 3, we found an average of 14 (0-20).

While anorectal manometry was performed in all patients; endoanal USG was most commonly performed in Group 2 (42.6%, p. 0.013), defecography in Group 1 (47.4%, p. 0.0001), and electromyography in Group 3 (25.3%, p. 0,001). This is shown in Table IV.

The combination of anal manometry and defecography in the ODS group increased the surgical treatment rate. The relationship between anorectal physiology tests and treatment plan in patients with obstructive defecation syndrome is shown in Table V.

Of the patients who had defecography performed in the ODS group, 9 patients with normal defecography received medical treatment, while 3 patients (33%) with pathological defecography results had surgical treatment (p<0.05).

In the ODS group, 76.4% of the patients with low sphincter pressure on anal manometric examination received medical treatment, while all patients with increased sphincter pressure received medical treatment. Of the patients with pathological findings in their defecography, sphincter pressures were found to be decreased in 42.9% of patients receiving medical treatment and 57.1% of patients receiving surgical treatment. This is shown in Table VI.

In group 2a except anal incontinence; perioperative patient population, the treatment methods of patients who only anal manometry and those who underwent ultrasound combined with manometry, and the effects of sphincter squeezing pressures obtained after anal manometry in these patients are given in Table VII.

In the control group after sphincter repair, changes in sphincter pressures before and after operation were examined manometrically and sphincter pressures were found to be increased in 66.7% of patients.

In group 3, anal ultrasound application with manometry increased the rate of surgical treatment (1.9% vs32.6%, p<0.005). The relationship between anorectal

TABLE IV - Distribution of the examinations performed according to the appropriate indication in the patients evaluated by the coloproctology team

		Group1 n (%)	Group 2 n (%)	Group 3 n (%)	p
Manometry	Present	38 (100)	48 (100)	154 (100)	1
Ultrasonography	Present	5 (13.2)	20 (42.6)	49 (31.8)	0,013
Defecography	Present	18 (47.4)	3 (6.3)	10 (6.5)	0,0001
Electromyography	Present	1 (2.6)	0 (0.0)	39 (25.3)	0,0001

Group 1: ODS (Obstructive defecation syndrome); **Group 2:** Peroperative and postoperative; **Group 3:** Anal incontinence

TABLE V - Relationship between anorectal physiology tests and treatment plan in patients with obstructive defecation syndrome

		Medical n (%)	Surgery n (%)
Only Manometry	(n = 38)	32 (84.2)	6 (15.8)
Manometry and ultrasound	(n = 5)	5 (100.0)	0 (0)
Manometry and defecography	(n = 12)	12 (76.7)	6 (33.3)

physiology tests and treatment plan in anal incontinence groups is given in Table VIII.

Of the patients who underwent manometry and anal ultrasound in Group 3b, sphincter defect was detected in 71% of patients receiving medical treatment and

100% of patients receiving surgical treatment (p. 0.676). In Group 3c, sphincter defect was detected in 60% of patients receiving medical treatment and 50% of patients receiving surgical treatment (p. 0.476).

In the manometric measurements of 33 patients with sphincter defect on endoanal USG in Group 3, external anal sphincter pressure was low in 28 (84.9%) patients, normal in 4 (12.1%) patients, and high in 1(3%) patient. In 16 patients without sphincter defect on endoanal USG, sphincter pressures were low in 13 patients (81.2%), normal in 0 patients, and high in 3 patients (18.8%) (p. 0.074).

Sphincter defect was detected in the endoanal USG in 80% of patients with history of birth trauma and 53.7% of patients without birth trauma (p. 0.060).

TABLE VI - The effect of manometric sphincter pressures on the treatment plan in obstructive defecation syndrome group

Treatment		Medical n (%)	Surgery n (%)
All patients			
Sphincter pressure decreased	(n=17)	13 (76.4)	4 (24.6)
Sphincter pressure normal	(n=12)	10 (83.3)	2 (16.7)
Sphincter pressure increased	(n=9)	9 (100.0)	0 (0.0)
Patients with pathological findings in their defecography			
Sphincter pressure decreased	(n=7)	3 (42.9)	4 (57.1)
Sphincter pressure normal	(n=2)	0 (0.0)	2 (100.0)
Sphincter pressure increased	(n=0)	0 (0.0)	0 (0.0)

TABLE VII - The effect of sphincter squeezing pressures obtained after anal manometry in Group 2a on the treatment plan

	Medical n (%)	Surgery n (%)
Manometry (n=39)	10 (25.6)	29 (74.4)
Manometry+USG (n=10)	6 (40.0)	9,60.0
	(n=10)	(n=29)
Sphincter pressure decreased	8 (80)	16 (55.2)
Sphincter pressure normal	2 (20)	5 (17.2)
Sphincter pressure increased	0 (0)	8 (27.66)

Group 2a: P.G.E.A.I (Perioperative group except anal incontinence)

TABLE VIII - Relationship between anorectal physiology tests and treatment plan in anal incontinence groups

	Group 3 n (%)	Group 3a n (%)	Group 3b n (%)	Group 3c n (%)
Manometry	(n=67)	(n=15)	(n=4)	(n=48)
Surgical treatment	1 (1.49)	0 (0)	1 (25.0)	0 (0)
Manometry and only ultrasonography	(n=49)	(n=1)	(n=17)	(n=31)
Surgical treatment	16 (32.6)	0 (0)	10 (58.1)	6 (19.3)
Manometry and only defecography	(n=10)	(n=2)	(n=2)	(n=6)
Surgical treatment	4 (40.0)	1 (50.0)	2 (100.0)	1 (16,7)
Manometry and only electromyography	(n=39)	(n=2)	(n=0)	(n=17)
Surgical treatment	1 (2.57)	0 (0.0)	0 (0.0)	1 (5,88)
Independent of physiological tests	(n=154)	(n=39)	(n=21)	(n=94)
Surgical treatment	19 (12.3)	1 (2.6)	11 (52.4)	7 (7.4)

Group 3a: A.I.N (Anal incontinence neurogenic); Group 3b: A.I.B.T (Anal incontinence birth trauma); Group 3c: A.I.O (anal incontinence other)

TABLE IX - Comparison of sphincter pressures obtained with anal manometry in patients with and without EMG pathology in all patient groups undergoing electromyography

	EMG Normal n (%)	EMG Pathologic n (%)	P
Squeezing Pressure Group	(n=25)	(n=13)	
EAS Low	16 (64.0)	12 (92.3)	0.167
Normal	8 (32.0)	1 (7.7)	
EAS High	1 (4.0)	0 (0.0)	

In our study, the comparison of sphincter pressures obtained by anal manometry of the patients with and without pathology in EMG in all patient groups undergoing EMG is shown in Table IX.

In the anal manometry examination of 5 patients in Group 3c who were recommended biofeedback therapy, external anal sphincter pressures were low in 4 (80%) patients and normal in 1 (20%) patient; of the 89 patients who weren't recommended biofeedback, 58 (65.2%) patients had lowdüşük, 18(20.2%)patients had normal and13 (14.6%) patients had high pressures (p. 0.641). In Group 1, 9(60%) out of 15 patients who were not recommended biofeedback treatment and none of the 3 patients who were recommended biofeedback treatment had any pathological findings (p. 0.206).

Discussion

The most important step should be to determine the appropriate treatment modality in a patient with pelvic floor disease and inform the patient about the expected results; due to the wide etiological spectrum, the lack of a single effective diagnostic test to determine the etiology, and the variety of conservative and surgical treatment options ^{3,4}.

The mean age of the patients included in our study showed homogeneity between the groups. There was no statistically significant difference between the groups in terms of the mean age. The sex distribution of the patients was 43.3% female and 56.7% male. When we look at the sex distribution in the subgroups, the number of female patients in the obstructive defecation syndrome group and the number of male patients in the anal incontinence neurogenic group were higher and this was statistically significant.

When we look at the sphincter tone in the digital rectal exam of the patients, the rate of low sphincter tone was higher in Group 3 compared to the other groups and the rate of increased sphincter tone was higher in Group 1 compared to other groups. Although digital rectal examination helps us to determine the tone of sphincter, its sensitivity is around 75% ⁵.

In our study, when we look at the sphincter tones at the rectal digital exam and sphincter tones with the mano-

metric examination, 52.5% of the patients who were said to have normal tone had low sphincter pressure at the manometer, and 28.9% of the patients who were said to have increased tone had low sphincter pressure at the manometer. This was compatible with the literature.

When we look at Wexner scores, it was found statistically significantly higher in Group 3 compared to other groups.

The majority of patients presenting with anal incontinence to any surgical center give anorectal surgery history in their anamnesis. Any surgical intervention to the anorectal region is a risk factor for sphincter damage.

When we look at the literature, it was found that 35% of women develop sphincter damage during their first vaginal birth ⁶. Birth trauma plays an important role in anal incontinence in female patients ⁷.

A comprehensive study demonstrating the usefulness of anorectal manometry was reported in 1997 by Rao et al. 143 patients were included in this study and 18-month follow-up was taken. With anorectal manometry, 88% had new findings for the disease, and 76% of patients had changes in their treatment ⁸.

In 7 of 10 patients considered for anorectal surgery, it was found with manometric examination that they would not benefit from the surgery and the surgery was actually contraindicated. In this way, anorectal manometry is an application that must be entered into clinical practice because it is easily performed, has less contraindicated conditions, and to better understand the pathophysiology of diseases other than objective diagnosis.

The patients who applied to us were evaluated in 3 groups. Anal manometry was applied to all patients.

Treatment management in anal incontinence should be planned considering the etiologic cause. Determining the anatomy of the region prior to surgery in incontinence patients, where anatomical reasons are at the forefront, helps to plan the surgical procedures in advance and to reveal the anatomy of the region in order to increase surgical success. For this reason, endoanal USG should be applied to the patients.

The number of patients who underwent endoanal USG was significantly higher in Group 2 and 3, when compared to Group 1

In one study, rectocele was detected in the defecography of 60% of the patients diagnosed with obstructive defe-

cation syndrome⁹. Studies have shown that ODS is largely due to multiple instances of different abnormalities of the rectum and pelvic floor. For this purpose, a single test would not be enough in the planning of ODS diagnosis and treatment.

In our study, it was found The number of patients who underwent defecography that was significantly higher in patients in Group 1, than in Groups 2 and 3.

The electrical activity of the external anal sphincter and puborectal muscle can be recorded by EMG examination of the anorectal region. In one study, 60% of women with external anal sphincter damage in normal vaginal deliveries, also had pudendal nerve injury. Pudendal nerve damage was seen in 65.2% of the patients with external anal sphincter and therefore, treatment was found to be biofeedback in 41.9% of these patients¹⁰.

In the studies performed on, the results of surgical treatment in anal incontinence patients with pudendal nerve injury were less successful than other patients¹¹. In another study, pudendal nerve injury was found to be 58% in idiopathic anal incontinence¹².

The rate of EMG was significantly higher in patients in Group 3 than in Groups 1 and 2.

When we consider the etiology of pelvic floor diseases and anal incontinence, considering multiple varieties and a variety of causative factors, it would be wise to use combined anorectal physiology tests in the diagnosis of these patients.

When we look at the role of physiologic tests in anal incontinence subgroups in the surgical treatment decision making process, the rate of referral to surgical treatment of patients who underwent USG with manometry was statistically significantly higher than that of the patients who underwent manometry alone. The rate of referral of the patients who underwent defecography with manometry was statistically significantly higher than those who underwent manometry alone. The rate of surgical referral of the patients who underwent EMG with manometry was similar to those who underwent manometry alone.

In our study, combined use of anorectal physiological tests in anal incontinence groups increased the rate of referral to surgical treatment. It was found to be compatible with the literature. Anal EMG in the anal incontinence groups helped us to determine the etiologic cause and did not affect the treatment planning. In a study in the literature, it was found that in patients with low sphincter pressures on the anorectal manometer, latent spinal disease without any symptoms was associated with a decrease in the contractile strength of the anal sphincters.

When all patient groups who underwent EMG in our study is examined, sphincter pressures were low in 64% of patients with a normal EMG and 92.3% of patients with a pathology in their EMG. In a study, sphincter defect was detected in the USG of 75% of the patients presenting with incontinence¹³. In our study, when we looked at Group 3c, 50-60% sphincter defect was found

in patients who underwent USG. This is similar to the literature.

When we look at the treatment plan of patients with anal incontinence secondary to birth trauma, meaning the patients in Group 3b, all of the patients who were recommended surgical treatment had sphincter defect on USG. 60% of the patients with medical treatment had sphincter defect on USG. Although the detection rate of sphincter defect increases with USG, it is not a sufficient factor alone in making surgical decisions. Pinta et al. found that the incidence of sphincter defect detectable by endoanal USG was 23% after vaginal delivery and 45% after intervention delivery¹⁴. Sultan et al found the rate of obstetric sphincter defect in anal incontinence to be 42% in women¹⁵.

Of the patients who underwent USG, sphincter was detected in 80% of patients with history of birth trauma and 53% of patients without birth trauma.

Birth trauma significantly increased the incidence of sphincter defect in patients. When the entire anal incontinence group is examined, 84.9% of the patients with sphincter defect on USG showed low sphincter pressures in manometric examination.

When the entire anal incontinence group is examined, sphincter defect was found in 68% of patients with low sphincter pressure on the manometer. In a study in the literature, anal sphincter resting pressure was found to have a sensitivity of 51% and a specificity of 70% in the diagnosis of IAS injury. In the same study, anal sphincter squeezing pressure was found to have 58% sensitivity and 79% specificity in detecting external anal sphincter damage¹⁶.

When we evaluated medical and surgical treatment in anal incontinence subgroups independent of physiological tests, it was found that surgical treatment was performed statistically significantly more in Group 3b, than in Group 3a and Group 3c.

In anal incontinence groups secondary to birth trauma, in patients with sphincter defect and with normal EMG, it would be wise to prefer surgical treatment.

In the meta-analysis, which included 11 studies involving 564 patients with biofeedback or pelvic floor exercise, the results obtained were not very different from other treatments¹⁷. In another study, success rate for urge type incontinence, especially against liquids, was found to be 85%¹⁸. In our study, no statistically significant difference was found in the sphincter pressures in the anal manometric examination of the patients in the biofeedback group and in the non-biofeedback group.

In anorectal physiological studies, it can be determined that the relaxation of puborectalis and external anal sphincter is not realized¹⁹. Cine-defecographic imaging may reveal that there is no puborectal muscle relaxation and anorectal angle does not widen at the time of defecation. In one study, anterior rectocele could be seen in 30-80% of all women, but 20-50% of them were a size that could cause defecation complaints²⁰.

In our study, when we look at Group 1, we see that manometer and defecography are performed more compared to other tests in patients with obstructive defecation syndrome. When we look at this group, it was found that patients undergoing defecography were referred more to surgical treatment. Defecography alone is not the only factor in surgical decision making.

In our study, the rate of surgical treatment of the patients with pathological defecography was significantly higher than the patients with normal defecography. In one study, rectocele was detected on defecography in 50% of patients with normal sphincter pressure on the manometer and diagnosed with obstructive defecation syndrome²¹.

When we look at the obstructive defecation syndrome group in our study, the number of patients with normal or decreased sphincter pressures in their manometry were higher than those with increased pressure. When we look at the effect of this on the treatment plan, none of the patients receiving surgical treatment had high sphincter pressures. The distribution of sphincter pressures in manometric measurements was balanced in patients receiving medical treatment.

In obstructive defecation syndrome manometer is not an effective method for planning treatment alone, it should be combined with defecography. In our study, when 9 patients with pathologic defecography findings were evaluated, medical and surgical treatment rates were similar in patients with decreased sphincter pressures, but all patients with normal sphincter pressures received surgical treatment.

Adding defecography to the manometer increased the rate of surgical treatment, especially in patients with normal sphincter pressures. Obstructive defecation may be associated with fecal incontinence in 50 percent of the rectal prolapse subgroup of affected patients.

This fact is clinically important and can influence decision-making in choosing the right approach for surgical management. It is important to identify the main cause of ODS, as poor patient selection results in functional outcomes that are unsatisfactory after surgery²².

In functional defecation disorder, inadequate contractions of pelvic floor muscles and external anal sphincter muscles can be corrected by biofeedback. The aim is to train the patient by a form of training so that the patient can relax their anal sphincter muscles during defecation, exercise the abdominal muscles and also regain the sensitivity of the rectum with the coordination between the abdominal muscles, rectum and anal sphincter muscles²³.

In one study, a successful outcome was seen in 70% of the patients by being taught to relax the external anal sphincter and puborectal muscle. 57% of the patients who underwent biofeedback treatment due to obstructive defecation syndrome had significant clinical improvement, 29% were asymptomatic and 14% did not have symptomatic changes²⁴.

In our study, if we look at the defecographies of the

patients in the group with and without biofeedback treatment in obstructive defecation syndrome, the entire biofeedback group had normal defecography, and 60% of the group who were not recommended biofeedback had a pathology.

According to the examinations performed for the purpose of control before a proctologic operation, 76% of the patients who had only manometry were offered surgical treatment, while this rate decreased to 60% in patients who underwent USG with manometry.

We can explain the decrease here by the detection of additional pathologies on imaging. The presence of a sphincter defect on USG and low sphincter pressures on the manometer affect the decision for the operation, especially in patients scheduled to be operated on for proctologic diseases. In our study, sphincter pressures were found to be low in manometric examination, in 80% of the patients who were not recommended an operation for proctologic disease, and medical treatment was recommended. In our study, in the postoperative control group (sphincteroplasty operation), 66.7% of the patients had increased sphincter pressures compared to the preoperative values. This result is consistent with the literature. By using combined anorectal physiological tests, it is possible to have a better understanding of the physiopathological basis of diseases.

Conclusions

In patients presenting with anal incontinence, anorectal physiology tests are useful in turning subjective complaints into objective findings. Especially in pelvic floor diseases and anal incontinence, anorectal physiological tests are important for correct diagnosis and treatment planning because there are multiple factors and simultaneous existence of multiple diseases. Since different physiopathological mechanisms are effective, the present pathology should be well established. If the correct pathology cannot be detected, the success rate in surgical and medical treatment decreases. If incontinence after surgical treatment can be predicted, it is also possible to intervene to the possible cause.

Riassunto

Lo studio è finalizzato alla traduzione in dati obiettivi dei sintomi soggettivi, e a valutare l'effetto dei test di fisiologia anorettale sulla diagnosi e sul trattamento dei pazienti con problemi defecatori.

Sono stati compresi nello studio 240 pazienti che hanno fatto accesso alla nostra Unità Proctologica tra gennaio 2015 e agosto 2017. I pazienti sono stati divisi in 3 gruppi in base ai loro sintomi alla presentazione; Gruppo 1: Sindrome da defecazione ostruita (ODS); Gruppo 2: Peroperatorio, tranne l'incontinenza anale e

controllo dopo la riparazione dello sfintere; Gruppo 3: Incontinenza anale. Il Gruppo 2 e il Gruppo 3 sono stati suddivisi in sottogruppi. I dati demografici dei pazienti sono stati analizzati retrospettivamente. Sono stati valutati il numero di test fisiologici anorettali eseguiti nei gruppi e le percentuali di rinvio a trattamenti chirurgici o medici.

L'età media è risultata più elevata nel gruppo 3 ($46,2 \pm 17,8$ (p: 0,356), il 43,3% dei pazienti nel nostro studio era di sesso femminile. La manometria anorettale è stata eseguita in tutti i pazienti. p: 0,013), la defecografia nel gruppo 1 (47,4%, p: 0,0001) ed elettromiografia (EMG) nel gruppo 3 (25,3%, p: 0,001).

Nel gruppo 1, il 33% dei pazienti con reperti di defecografia patologica ha subito un trattamento chirurgico (p < 0,05). Nel gruppo 2a, il tasso di trattamento chirurgico era più elevato nei pazienti sottoposti a ultrasonografia (USG) anale con manometria anorettale (% 25,6 vs% 40). Nel gruppo 3, il tasso di trattamento chirurgico è stato maggiore nei pazienti sottoposti a USG anale con manometria (% 1,9 vs% 32,6 p < 0,005) Dalla studio si conferma l'importanza dei test fisiologici anorettali ai fini di un'accurata diagnosi e pianificazione del trattamento. L'uso combinato di test fisiologici anorettali nei gruppi di incontinenza anale ha aumentato il tasso di precisione alle indicazioni per il trattamento chirurgico.

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