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Analysis of the Role of Alberto Pena in the Development and Promotion of Posterior Sagittal Anorectoplasty

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ABSTRACT

Currently, posterior sagittal anorectoplasty (PSARP) is the most popular operation for anorectal malformations (ARM). t was first published in the article by deVries and Peña in 1982. Methods. The article compares the results of studies on the anatomy and pathophysiology of ARM with Peña's claims, as well as long-term outcomes after cutback procedure compared with PSARP. Results. Peña, to justify PSARP, without any evidence, began to deny the presence of an anal canal in ARM and claimed that the puborectalis muscle is not important for fecal continence. These claims were erroneous and led to the destruction of the anal canal. The use of the cutback procedure in low types of ARMs, which preserved the anal canal, leading to good long-term results in 90% of cases. After PSARP, using a similar assessment, all patients had poor results. At an international conference (2005), a classification was adopted in which there was no division into high and low types, since it was recommended to perform PSARP with all types of ARMs. This classification, adopted by Peña's invited surgeons, rated PSARP as the ideal procedure. The recommendations of the Krickenbeck classification, previously prepared by Peña, have become not only Standards for practicing physicians, but also an insurmountable obstacle to scientific research. It is necessary to revive the discussions to discuss the state of anorectal pediatric surgery.

Keywords: Alberto Peña, Anorectal Malformations, Posterior Sagittal Anorectoplasty, Cutback Procedure, Long-Term Results, Anal Canal Ectopy, Krickenbeck Classification, Standards.

INTRODUCTION

Anorectal malformations are a rather rare congenital pathology. Unfortunately, the treatment of these children is a complex problem. Most patients who have undergone various operations suffer from chronic constipation and fecal incontinence throughout their lives. To analyze Alberto Peña's contribution to the treatment of these patients, it is necessary to dwell on the state of this problem before he proposed the posterior sagittal approach in the pull-through procedure.

Historical context

Stephen's research proved that a line drawn between the last coccygeal vertebra and the distal outline of the pubic bone on a lateral pelvic

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radiograph (pubococcygeal line - P-C) is at the level of the puborectalis muscle (PRM), which separates the rectum and the anal canal. He demonstrated the important role of the PRM in fecal continence and proved that the detection of gas in the intestine caudal to the PRM indicates the presence of an anal canal. Since then, it has been believed that patients with ARM with visible fistulas (perineal, vestibular, congenital anal stenosis) have an anal canal, which justified the cutback procedure [1]. Although surgeons, out of habit, continued to use the term "fistula" at low ARMs, they meant the fistula opening, and used "ectopia of the anal canal" as a diagnosis. [2,3]. At that time, it was believed that if the terminal pouch lies above the puborectalis sling, these cases were classified as high or intermediate types of ARMs, since it was believed that they had no anal canal. Stephen proposed using the sacrococcygeal route of Kraske, for access to the rectum using a pull-through procedure in the reconstruction of high and intermediate types of ARMs. The purpose of this pull-through procedure was the reconstruction of proper relationship between bowel, the levator diaphragm and external sphincter, without damage to the muscles and neural plexus of the pelvis. The sacrococcygeal approach facilitates identification of puborectalis sling. The muscle is separated from urethra or vagina, and gradually the tunnel through the sling and external sphincter is created. The gentle and proper plane pull of the bowel through an undamaged PRM gives the possibility to save its function as rectal sphincter and receptors as well [4].

In 1960-1982, in ectopic anus, the simple cutback was considered sufficient to make the imperfect anus large enough to its normal function where it lies [3,5]. Wilkinson described the original so-called "cutback operation" as "one blade of scissors was placed in the fistula and the other across the perineum". "Because the fistula passed through the limbs of the puborectalis sling, if a sufficiently wide channel was made by dilatation, the child was continent". However, unlike Nixon, he did not use cutback in vestibular ectopy [6]. The outcomes of the cutback procedure for low types of ARMs in both boys and girls, based on the Wingspread classification, are outlined in Table 1. Ratings were deemed as "good" when normal fecal retention and absence of constipation were achieved, "fair" when patients required laxatives or enemas, and "poor" when fecal incontinence and/or uncontrollable constipation occurred [3,7-9].

Table 1. Treatment Results after Cutback Procedure

Authors	Good (%)	Fair (%)	Poor (%)
1. Nixon [3]	98	0	2
2. Ackroyd et al. [7]	85	15	0
3. Kyrklund et al. [8]	90	8	2
4. de la Fuente [9]	90	?	?

For example, according to Kyrklund et al., boys with perineal fistula after the cutback procedure do not have problems with fecal incontinence. Constipation was observed in 33%, which declined significantly with age [8]. It is known that children with perineal ectopy of the anus are often diagnosed with a delay. Since the ectopic anus is usually narrow and does not provide normal emptying of the rectum, by the time of surgery, patients develop megarectum. It follows that the cause of constipation is the discrepancy between the width of the postoperative anus to the size of the feces formed in the dilated rectum, and not a defect in the operation.

The idea of the significant role of the PRM in fecal continence has been confirmed by scientific studies. For example, Shafik (1979) concluded based on anatomical studies that "The puborectalis not only acts as a "common tunnel" sphincter but provides an "individual" sphincter for each intrahiatal organ" [10]. At present, the important role of puborectalis in fecal continence is a generally recognized fact [11,12]. If this is true even for rabbits [13], can there be any doubt that in children with ectopic anus, where there is a normally formed anal canal, the puborectalis should be preserved during correction?

This review is devoted only to ARMs with visible fistulas (congenital anal stenosis, perineal and vestibular fistulas) not because these are the most common types of defects, but because we can compare ideas about pathological physiology, diagnostic and treatment methods, as well as long-term results of two different periods (before and after 1982).

Analysis of the PSARP methodology

Peña career began with an article he co-authored with deVries (Oct, 1982) [14]. Neither of them had articles published about ARM before. In the introduction they accused Stephens of allegedly believing that the puborectalis portion of the levator musculature constituted the only potential sphincter available for continent following pull-through. However, this accusation is not true because, as shown above, the described method preserved the entirety of the PRM and the EAS through which the intestine was pulled. All other disadvantages pointed out by the authors are either characteristic to all pull-through procedures, including PSARP (high incidence childhood incontinence, postoperative prolapse), or assumptions not supported by facts, and without references (presacral plexus is at some risk). The article described 34 patients who had been operated on by a posterior sagittal approach between October 1980 and November 1981. Twelve of the 34 cases had their colostomies closed. Since all patients underwent colostomy production and closure within a year, this means that the results were determined significantly less than a year later after PSARP. It is impossible to judge the results during this time. Good results cannot be expected in the future, since the age ranged from 8 months to 8 years (on average 2.6 years) [14]. Two months later, the same journal published an article by Peña and Devries "Posterior sagittal anorectoplasty: important technical considerations and new applications". It provides information on 54 (+20) patients operated by the PSARP, which is intended for the repair of high anorectal malformations [15]. In this article Peña stated that "papers have appeared in which the external sphincter is described as a rudimentary structure of little effect on continence" [15]. This phrase shows his worldview. He does not provide references although the importance of the external anal sphincter, consisting of deep, superficial and subcutaneous parts, has been proven for centuries. It was a preamble to state: - "It was learned through this procedure (PSARP) that the external sphincter is a functionally useful prominent structure" [15]. It turns out that not many generations of anatomists, histologists and surgeons, but Peña during the operation proved the importance of the EAS. At the same time: - "No puborectalis sling, as such, could be identified". "The identification and delineation, intraoperatively, of the puborectalis sling is confusing because the various authors have not described it accurately. As a result, Peña began to doubt that the previous generation of surgeons, following Stephen, had found and used the PRM. And he made a surprising thought: if he had not found the PRM during surgery, why should he think that it plays an important role in fecal continence? "This doubt, ...led us to develop the posterior sagittal anorectoplasty technique" [15]. Thus, having crossed out the scientific research of previous generations, he together with deVriese proposed PSARP, in which the PRM, which plays an important role in fecal retention, was cut and permanently removed from the physiology of the anorectum. Moreover, the EAS, which Stephen and other surgeries had left intact, the authors cut along its entire length and separated it from the coccyx. It turned out that Peña (deVriese certainly had nothing to do) operated on children and wrote article about a new approach pull-through procedure, without knowing the anatomy of the anorectum. So, he came up with a new terminology: - "We have named the muscle structure where the external sphincter merges with the levator ani (probably in the zone assigned to the puborectalis sling) "muscle complex." It is our opinion that the group which includes the external sphincter, "muscle complex," and levator ani must be carefully preserved, as a whole, in order to obtain optimal continence" [15]. He considers the subcutaneous portion of the LES to be the external sphincter, apparently because it is located outside. He admires that after the operation he feels its contractions with the tip of his finger. But this thinnest ring-shaped muscle, which occupies about 10% of the total length of the LES, is the only one that he did not cut during PSARP. It contracts briefly in response to a sharp increase in rectal pressure, and, as practice shows, its cutting during the cutback procedure does not lead to fecal incontinence [1,3,5,6,8,16].

This article, written by Peña, in which he deliberately changed the name deVriese to Devriese so that there would be no doubt about its authorship, makes claims that do not stand up to scientific criticism.

1. The article states that "Posterior sagittal anorectoplasty (PSARP) is a new technique for the repair of high anorectal malformations" [15]. However, Peña used this procedure in 7 patients with low type ARMs. In the article Browne, which Peña and deVriese cite to support the thesis about the poor results of the pull-through procedure, describes the so-called shot-gun perineum. In this rather rare deformity, a normally functioning anus and vagina open side by side. There is no interference with function, and women in this condition may marry and have children without ever suspecting their slight departure from the normal. An ectopic anus is a true anus, complete with normal nerve control for opening and closing. The vaginal anus is usually represented by a narrow rigid ring. It is in the vestibule. Browne recommends a simple backward incision from the displaced opening right across the normal situation of the anus, made by placing one blade of a pair of dissecting scissors in the bowel while the other lies on the skin. He did not recommend suturing the raw surfaces obtained in this way, since in a month or

two they would be covered with new, young skin. These recommendations apply equally to ectopia of the anus in the vestibule of the vagina in girls and to perineal ectopia in patients of both sexes, which is the largest group among ARM [16]. After Peña's articles, the distinction between high and low ARM types disappeared. It made no sense, because Peña recommended (strongly) PSARP anyway. The idea of an anal canal disappeared. It became known as a fistula or a rectal sac. There were scientists who claimed that it was devoid of sensitivity and lacked an intermuscular nerve plexus. They did not know that a normal anal canal does not have nerve ganglia [17].

2. Peña states that "In all these anomalies, the rectum and urethra (or vagina) are very closely joined, sharing a common wall, and their separation calls for extensive exposure" [15]. This statement, contrary to embryology and physiology, is based on the primitive idea that if the organs are difficult to separate from each other, this means that they have one wall. Radiograph 1 shows studies using high rectal pressure.

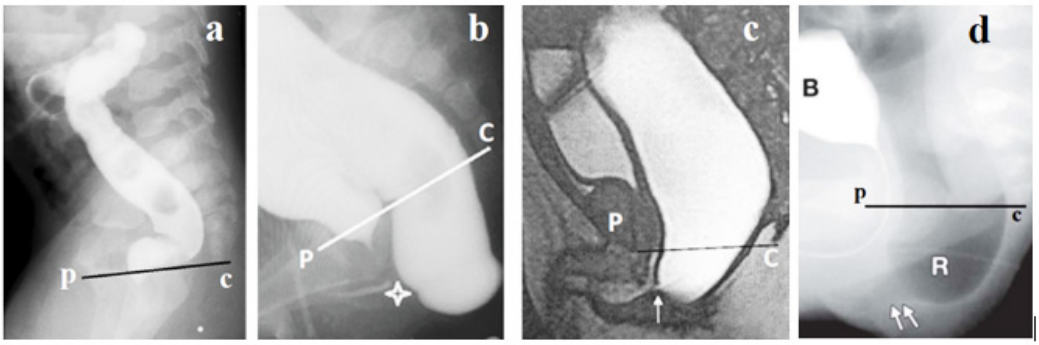

Figure 1. Radiographic studies of boys with "rectourethral fistula" performed using high rectal pressure. **(a):** From the article by Peña and colleagues, which states that distal colostogram performed with inadequate pressure shows contrast agent infused by gravity from a bag (hydrostatic pressure). The rectal sphincter is closed and not distended because of inadequate pressure. **(b):** With adequate pressure (hydrodynamic), the contrast agent filled the wide rectum, which contacts the urethra, and its distal edge is located far from the P-C line, near the perineal skin. **(c):** CT section. **(d):** A patient with a narrow ectopic perineal anus (arrows) on the perineum. The widely open anal canal is mistakenly called the rectum.

First, the rectum is located above the P-C line. Below is the anal canal. Using Figure (d) as an example, we see that the opening of the distal bowel is due to a reflex opening in response to high pressure in the rectum. Therefore, there is normal sensation and a normal defecation reflex. The article by Kraus et al with Peña says: - "it is extremely important in this regard to understand that the lowest part of the rectum is usually collapsed from the muscle tone of the funnel-like striated muscle mechanism that surrounds the rectum in 90% of cases (in 10% of cases, mostly bladder-neck fistulae, the fistula is above the sphincter muscles)" [18]. Since it is known from anatomy that there are no muscles around the rectum, it becomes obvious that it is not the rectum. If the distal part of the intestine is located where the anal canal is usually located, if around there are muscles that contract at low pressure in the rectum (retention reaction) and open wide at high pressure in the rectum (defecation reaction), then it is the normal anal canal. To call it the rectum is a gross mistake. These data confirm my hypothesis that with all ARMs in the embryonal period, ectopia of the anus occurs after the normal anal canal has already formed and the endodermal portion of the internal anal sphincter, not having met the ectodermal rudiment, moves forward and upward until it can penetrate to the outside or into some cavity organ [19]. It follows that with almost all ARMs there is a normally functioning anal canal, so they are all low types. Not the removal of the anal canal, but its preservation can ensure the normal function of the anorectal zone in ARMs. However, now we are discussing the article by Peña (1982), when it was already known that the use of the cutback procedure for ectopia of the anus on the perineum or vestibule, as well as for anal stenosis, leads to remarkable results. These forms of ARM make up 60 to 70% of patients. The obviously false justification of PSARP has led to destruction of the anal canal and disability in tens of thousands of patients.

Secondly, the statement that the urethra and anal canal have one wall contradicts the histological data published in textbooks. The presence of different walls in different pelvic organs is an axiom. In the pictures (b) the wall of the anal canal gradually approaches the urethra to the site of the fistula opening. In the picture (d) the wall of the anal canal continues, moving away from the urethra. The logic is simple: if the distal part of the anal canal has a wall, which there can be no doubt about, then why is it not there when

the anal canal is located next to the urethra? This is already the fifth example of how Peña states ideas that contradict known scientific knowledge.

3. Of the 54 patients operated on, 20 of whom appeared 2 months after the first article, "Colostomy has been closed in 27 patients and fecal continence may be described as excellent, except in those patients with severe sacral anomalies, and unquestionably superior to that obtained by us with other techniques" [15]. Elsewhere it was reported that:-"The colostomies have been closed in 25 patients of the large group of cases of more common malformations for which the general technique was described. The results among the 25 children varied in accordance with their age and the associated vertebral malformations". However, the article lacks data on the number of patients with excellent results, the number of patients with severe sacral anomalies and poor results associated with late surgery.

An analysis of the results of PSARP use gives grounds to assert that all of Peña's statements about the excellent treatment results are highly doubtful, because...

1) He manipulates the numbers to camouflage the false statements.

2) It is known that late surgeries lead to poor functional results. All of Peña's surgeries were late - 8 months to 8 years (on average 2.6 years).

3) The explanation for the presence of poor functional results with sacral anomalies has no scientific confirmation. ARMs are often combined with defects of the heart, esophagus, genitourinary system and spine, but there is no evidence that only spinal defects impair anorectum function. On the contrary, after the cutback procedure, the functional results are good, despite the sacral defects. As shown by Peña, using high hydrodynamic pressure in the rectum, at least 90% of cases have a normally functioning anal canal, despite the pathology of the sacrum.

4) It is basically impossible to report results 1 year after the surgery.

5) Functional results can be only very poor after any pull-through procedure. All of them are based on the false idea of the absence of the anal canal. As a result, the IAS is destroyed and in its place the rectum is brought down, the function of which is the accumulation, not retention, of feces. It is isolated from the surrounding tissues, separated from the muscle mass of the levators, which normally open the anal canal to reduce the resistance to the passage of feces out. In this case, there is always an intersection of the feeding blood vessels and invisible nerve endings connecting the pelvic organs and providing a reflex connection, without which the reflexes of fecal retention and defecation are impossible [20]. With PSARP, unlike other approaches, the PRM is crossed, which acts as a sphincter, as well as a longitudinal dissection of 90% of the EAS and it's cut off from the coccyx. Only the subcutaneous part of the EAS is preserved, which Peña mistakenly calls the external sphincter. Thus, instead of a normally functioning anal canal, a perineal fistula is created [21].

Pediatric surgeons believed Peña's statements, that PSARP was the ideal operation, meaning there was no point in looking for better options and delving into the anatomy and physiology of the anorectum. This stagnation, which is caused by the "infallibility" of Peña's experience, is visible in all articles. A typical example is the article by Davies et al, in which they show the long-term results of PSARP [22]. In all, 284 patients with ARMs were operated on, who had to be more than 16 years old. The postal invitations for the study were sent to the 225 eligible participants. The responses were received from 114 (51%) of 225. The 74 (58%) were able to defecate spontaneously per rectum, 31 (10%) required regular oral medication or suppositories, 11 (15%) had an antegrade continence enema, 7 (10%) had permanent stomas and 6 (8%) required regular rectal irrigations [22]. The article is replete with several assessment methods and numerous figures that do not reflect the true state of the problem for the following reasons:

A. It is impossible to judge the percentages by completed questionnaires were received from less than 50% of the patients who operated.

B. The answers reflect the subjective assessment of patients, who reflected in their answers hopes for future improvement and gratitude to the doctors who warned the parents before the operation that since the child was born without an anal canal, the most favorable outcome would be if the feces did not fall out without control. For example, out of 23 patients with low ARMs, 21 (91%) defined defecation as normal. Meanwhile, in the article by Levitt et al, based on a review of 398 with good prognosis (read low type ARMs) for bowel control, the greatest risk for severe constipation and its consequences (fecal impaction, overflow pseudoincontinence, and megacolon) was discovered [23]. It follows that subjective assessments of the results of the operation have no scientific value. For an objective assessment of the condition of the anorectum after the pull-through procedure, regardless of the access, it is necessary to keep in mind that the defecation reflexes are damaged. Fecal retention depends on the ratio of the width of the rectum, in which feces are formed, and the throughput

of the fistula tract that arose after the removal of the IAS and damage to the EAS and PRM, which is mistakenly called the new anal canal. Therefore, for assessment, it is necessary to do a barium enema to measure the width of the rectum. Under anesthesia, it is necessary to perform a digital examination and insert a bougie of maximum diameter to determine its throughput. This is the only way to prove that no patient can be healthy after PSARP [24]. In the systematic review by Rigeros Springford et al., long-term active problems were as follows: fecal incontinence, 16.7% to 76.7%; chronic constipation – from 22.2% to 86.7%; urinary incontinence - from 1.7% to 30.5%; ejaculatory dysfunction – from 15.6% to 41.2%; and erectile dysfunction - from 5.6% to 11.8%. [25]. Although Peña made claims without evidence that contradicted known anatomical facts, presented his observations as if he had discovered unknown data for the first time, manipulated the numbers, and lied about the supposed advantages of PSARP over other surgical methods. This served the purpose of theoretically justifying PSARP, which should have become his brand for his career.

International Conference for the Development of Standards for the Treatment of Anorectal Malformations

Peña organized the first Peña Course (Workshop for the Surgical Treatment of Colorectal Problems in Children) in 1985, which is still ongoing. There he was demonstrating PSARP and convincing the participants of the remarkable results. In 2005, Peña organized an international conference in the city of Krickenbeck, to which he invited 26 pediatric surgeons. By this time, he had published 42 articles in which he described his experience. Of the 26 invited, 23 participants did not have articles on ARM, and most of them had no publications at all. Three participants (Holschneider, Iwai and Rintala) had 2-3 articles each that were indirectly related to the problems of ARM, in which they agreed with Peña's ideas. For example, Holschneider et al did not find ganglion cells in the rectal sac and concluded that it cannot be used to correct ARM [26]. They did not know that the normal anal canal, unlike other parts of the gastrointestinal tract, does not have an intermuscular plexus [27]. At the Krickenbeck Conference a classification was adopted that did not subdivide ARMs into low and high types, since PSARP was used anyway. Peña was able to convince former participants in the Peña Course that the anal canal was absent in ARMs [28].

In this classification, postoperative results are assessed by several characteristics (voluntary bowel movement, feeling of urge, capacity to verbalize, hold the bowel movement), including soiling (three grades) and constipation (three grades). However, these characteristics are subjective and there is no possibility of any combination to give an answer about the result - good, satisfactory, or bad. Therefore, the «voluntary bowel movement" is most often cited as a favorable outcome, but in fact it only means that the stool does not fall out regardless of the patient's will. But this does not mean that he does not have soil or severe constipation. This classification is proposed because if the results were assessed as before (see page 2), it would turn out that there are no good results after PSARP (Table 2).

The conference set standards that became mandatory for treating ARM. Peña published papers about his experiences in collaboration with pediatric surgeons who eventually became like-minded. This created a cohort of reviewers who rejected papers that did not match Peña's experience. More than 40 years have passed since 1982. Alberto Peña and his colleagues have not published a single scientific study. PSARP is considered the ideal operation for ARM, so there is no point in looking for other options. Numerous articles debate the need to perform spine examinations to predict poor surgical outcomes. Without mentioning the presence of spinal anomalies, the article could not be published. Numerous attempts to compare the results after PSARP with those after anterior sagittal anorectoplasty or with the laparoscopic approach have not found significant differences between these pull-through methods. They continue despite the obvious reason for their approximate equality: they all destroy the anal canal. A large library has been created by articles comparing one-stage ARM correction with a two-stage one. It turned out that the results of the operation are the same. Therefore, the authors concluded that it is best to perform a complete one-stage correction at an early age, in newborns, which contradicts the known laws of pediatric surgery. The later the correction is performed, the easier it is to preserve the functional elements, which explains the better functional results. The results of pull-through procedure treatment are the same regardless of the age of surgery, because in both cases it leads to complete destruction of the anal canal. Simply put, it cannot be worse. Before the introduction of mandatory standards, several articles were published indicating that "The PSARP for high and intermediate anorectal malformations does not give better functional results than the pull-through operation" [29,30]. When the standards came into force, only articles indicating the superiority of PSARP were published. For example, Danielson et al compared the long-term treatment results of patients operated on from 1974 to 1983 with pull-through procedures with patients who underwent PSARP from 1984 to 1993. They concluded that posterior sagittal anorectoplasty results in better bowel function and quality of life in adulthood than pull-through procedures [31]. This

conclusion is not substantiated, firstly, because the authors of the article used a subjective assessment based on the questionnaires received. Secondly, time after the surgery in patients after pull-through procedures was 10 years longer than after PSARP. These results confirm the known fact that the results after ARM correction worsen with age [32].

My research has shown that the anal canal is normally formed in the vast majority, and perhaps in all, patients with ARM. It is in a closed state at low pressure in the rectum, as in healthy people [17,19,21,33-36]. In 4 newborns with ARM with invisible and non-functioning fistulas, I performed perforation of the perineum during abdominal compression. When the anal canal opened, I inserted a needle into it, and then, using a guidewire, a 0.8 cm diameter tracheostomy tube. An inflated balloon in the rectum fixed the tube in the rectum for 10 days. During this time, bowel movements occurred through the tube, and the diastasis between the anal canal and the skin closed without scaring. One patient, who had esophageal atresia in addition to ARM, died of aspiration pneumonia. In three patients, the function of the anorectum did not differ from the norm [33,34]. These observations confirm the statement of Browne "No attempt should be made to suture the raw surfaces thus produced, and after a month or two they will be covered with supple and satisfactory new skin" [16]. Secondly, they once again confirmed that with the so-called high ARM there is a normally functioning anal canal. Based on the studies of the pathophysiology of the anorectum in ARM, I proposed a method for correcting invisible and functioning fistulas [36]. Since there is not enough material in the literature on preserving the anal canal with high ectopia of the anus, I compared the results after the cutback procedure with the results after PSARP in patients with visible fistulas (perineal, vestibular and with anal stenosis). To ensure that the results after PSARP were comparable to the cutback procedure at low ARM levels, it was necessary to use the rating method proposed by the Wingspread classification. Ratings were deemed as "good" when normal fecal retention and absence of constipation were achieved, "fair" when patients required laxatives or enemas, and "poor" when fecal incontinence and/or uncontrollable constipation occurred.

Comparative Analysis of PSARP vs Cutback as shown in the article by Schmiedeke et al, after PSARP complete continence was found in 40% of perineal fistula [37]. If after PSARP 60% had problems with fecal incontinence the PSARP results are "poor». According to Lombardi et al, after PSARP for vestibular fistulas seem to have the highest rate of constipation (not less than 61.4%) [38], which is also a poor result. Stenström et al. showed that "Among those with a perineal fistula, incontinence occurred in 42% of the females and in 10% of the males (p=0.005) whereas constipation occurred in 62% of the females and 35% of the males (p<0.001) [39]. Abo-Halawa et al described anatomical measurements of the anorectum in vestibular ectopia that lead to poor results: - obtuse anorectal angle, impaired hiatal/pubococcygeal ratio, which affected the ability to hold back defecation, soiling and accidents, deficient striated muscle, non-centralized neorectum, the presence of fat tissue between the anorectum and the muscle [40] (Table 2).

	Authors	Good (%)	Fair (%)	Poor (%)
1.	Nixon [3]	98	0	2
2.	Ackroyd et al. [7]	85	15	0
3.	Kyrklund et al. [8]	90	8	2
4.	de la Fuente [9]	90	?	?
A)	Schmiedeke et al [37]			≈ 60
B)	Lombardi et al. [38]			≈ 61.4
C)	Stenström et al. [39]			≈100
D)	Abo-Halawa et al. [40]			?

CONCLUSION

The literature review shows that the posterior sagittal approach has no advantages over other pull-through procedures. All evidence in favor of PSARP proposed by Peña has no scientific evidence and contradicts reliable scientific data. To promote PSARP as an ideal and unified operation, Peña groundlessly claimed that the distal part of the intestine in ARM, which before him was considered the anal canal in low types, cannot be used for reconstruction. This claim was explained by studies that did not find ganglion cells in this section. Meanwhile, this is precisely the evidence of the anal canal, which normally does not have an intermuscular nerve plexus. The use of PSARP in low ARM was based on this false claim, which leads to the destruction of the normal anal

canal. A comparison of remote functional results showed a huge advantage of the cutback procedure compared to PSARP. Peña invited, in addition to unknown participants, three pediatric surgeons, who were like-minded, to the conference in Krickenbeck. The recommendations of the Krickenbeck classification, previously prepared by Peña, have become not only Standards for practicing physicians, but also an insurmountable obstacle to scientific research. It is necessary to revive the discussions to discuss the state of anorectal pediatric surgery.

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None.

CONFLICT OF INTEREST

The author has no conflict of interest.

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