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Clinical Validation of an Adult-acquired Buried Penis Classification System Based on Standardized Evaluation of the Penis, Abdomen, and Scrotum

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OBJECTIVE	To clinically validate a previously developed adult-acquired buried penis (AABP) classification system that is based on a standardized preoperative physical examination that subtypes patients by their penile skin/escutcheon complex (P), abdominal pannus (A), and scrotal skin (S).
METHODS	The Trauma and Urologic Reconstruction Network of Surgeons (TURNS) database was used to create an AABP cohort. Patients were retrospectively classified using the previously described PAS classification system. The frequency of subtypes, surgical methods utilized for AABP repair, and correlations between PAS classification and surgery subtypes were analyzed.
RESULTS	The final cohort consisted of 101 patients from 10 institutions. Interrater reliability between two reviewers was excellent ($\kappa = 0.95$). The most common subtypes were P2c (contributory escutcheon + insufficient penile skin; 27%) and P2a (contributory escutcheon + sufficient penile skin; 21%) for penile subtypes, A0 (no pannus; 41%) and A1 (noncontributory pannus; 39%) for abdominal subtypes, and S0 (normal scrotal skin with preserved scrotal sulcus; 71%) for scrotal subtypes. AABP repair procedures included escutcheonectomy (n = 59, 55%), scrotoplasty (n = 51, 48%), split-thickness skin grafting (n = 50, 47%), penile skin excision (n = 47, 44%) and panniculectomy (n = 7, 7%). P, A, and S subtypes were strongly associated with specific AABP surgical techniques.
CONCLUSION	The PAS classification schema adequately describes AABP heterogeneity, is reproducible among observers, and correlates well with AABP surgery types. Future work will focus on how PAS subtypes affect both surgical and patient-centered outcomes. UROLOGY 180: 249–256, 2023. Published by Elsevier Inc.

Adult-acquired buried penis (AABP) is a condition where excess or abnormal surrounding soft-tissue covers the penis. Though it is associated with obesity and obesity rates are rising globally,¹ the exact prevalence of clinically significant AABP is unknown.² Given the sensitive nature of the condition, it is likely undertreated as many men are embarrassed to seek

care, and many providers are unaware of the contemporary treatment options.²⁻⁴ AABP occurs because the penis is attached dorsally to the pubis by the suspensory ligaments, and the relationship of the glans penis to the pubic bone remains “fixed” regardless of the surrounding soft tissues. Especially in the setting of increasing truncal obesity, the penile shaft skin and the skin overlying the pubis (often termed the escutcheon or mons pubis) will continue to migrate distal to the glans penis as the dermal fascial attachments begin to loosen.³ Chronic urine exposure can then lead to inflammation and contracture of penile skin causing cosmetic, sexual, hygiene, and voiding issues, as well as a potential risk factor for development of penile cancer.⁵⁻⁸

AABP is a complex social and medical problem for patients. Most patients report profound negative impacts on quality of life, difficulty finding providers to treat

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them and challenges with insurance coverage for needed care.⁴ Some patients counterintuitively report worsening of their symptoms with weight loss, and many struggle with mental health and relationships because of AABP.⁴ Of those who proceeded with surgery, most do so for improvement in sexual and urinary function.^{4,5} The range of patient goals and diversity of disease presentation create significant variation in surgical treatment of AABP. Numerous procedures with differing degrees of invasiveness and morbidity are performed to treat AABP.⁹ Even with this significant variation, in one study over 9 in 10 patients report they would choose to have the surgery again and greater than 8 in 10 report the surgery led to positive impact on their lives.⁹

While reported success rates of AABP repairs are high, there are significant limitations to our present ability to characterize and stage AABP. Previously published systems are based on the procedures performed and are designed to be applied postoperatively, deferring staging until after repair rather than at patient presentation.¹⁰⁻¹² To help patients, clinicians, and researchers, an AABP classification system was developed that utilizes anatomic variations of the penis (P), abdomen (A), and scrotum (S) to place AABP patients into PAS categories.³ The PAS system allows for preoperative classification, allowing for continuity between outcomes research and preoperative patient counseling. The purpose of the present study was to clinically validate PAS classification using a multi-institutional prospective registry of surgically managed AABP patients so to (1) identify the distribution of PAS classifications within the cohort, (2) determine if PAS classification was associated with AABP repair technique and (3) to determine if classifications and repair types were consistent among surgeons and institutions.

METHODS

Study Cohort

The study cohort consists of consecutive cases of surgically managed AABP patients found in the prospectively maintained Trauma and Urologic Reconstruction Network of Surgeons (TURNS) surgical reconstruction registry.¹³ The registry contains information on patient demographics (age, body mass index), AABP anatomic features including preoperative and postoperative photos, and type of surgical repair with full operative reports. Information on surgical outcomes is obtained through retrospective chart review at respective institutions.

AABP PAS Classification System

The classification utilized in this study has been described in full-detail elsewhere.³ The system highlights the complex, and heterogeneous, relationship between genital anatomic landmarks, including the abdominal pannus, the escutcheon/mons pubis, the penile skin, and the scrotum. The clinician is asked to perform a standardized physical examination with the patient standing,

standing with lifting of pannus, supine, and supine with retraction of escutcheon and exposure of glans penis if possible. Using only the physical examination, the clinician can then identify which anatomic structures are independently contributing to penile burying by following three classification pathways, (1) penile skin/escutcheon relationship (P), (2) abdominal pannus (A), and (3) scrotum (S) (Fig. 1 and Supplementary Table 1) (Notably, presence of a significant Escutcheon/scrotal Confluence, depicted in Figure 1B in the AP view, was not added to the classification system until after this study was completed).

PAS Classification

Each AABP cohort patient was retrospectively classified by two study authors using the PAS system with information contained in the TURNS registry using the classification pathways (Supplementary Table 1 and Supplementary Fig. 1). Authors were blinded to the other for their initial classification. Inter-rater reliability was calculated using Cohen's Kappa based on each individual's original classification.¹⁴ Discordant classifications were then resolved with retrospective chart review as necessary.

PAS Clinical Validation

The first step in validation was to determine the distribution of PAS subtypes among the cohort and the frequency of P, A, and S combinations. Next, we determined if PAS subtype predicted the components of the surgical repair, which included panniculectomy, escutcheonectomy, penile skin excision, split-thickness skin grafting, fasciocutaneous flap, scrotoectomy, scrotoplasty, hydrocelectomy, orchiectomy, meatotomy and urethroplasty. To assess for the distribution of the complexity of repairs, the number of components utilized per repair were compared by subtype. All subgroup analyses were performed with chi-square or Fisher exact test with *P*-value of <.05 as the marker of significance using Microsoft Excel.

RESULTS

Cohort Demographics

A total of 107 cases of AABP were in the TURNS database. Six patients had incomplete surgical information and were excluded, resulting in 101 patients in the cohort. Patients were included from 10 total tertiary care centers, each corresponding to a single surgeon. The mean patient age was 57.7 years (median 59 years, interquartile range 48-67 years), and mean body mass index was 42.1 kg/m² (median 42.1 kg/m², interquartile range 37.5-48.3 kg/m²).

PAS Subtype Distribution

The interrater reliability of the system was excellent ($\kappa = 0.95$). The distributions of PAS subtypes are shown

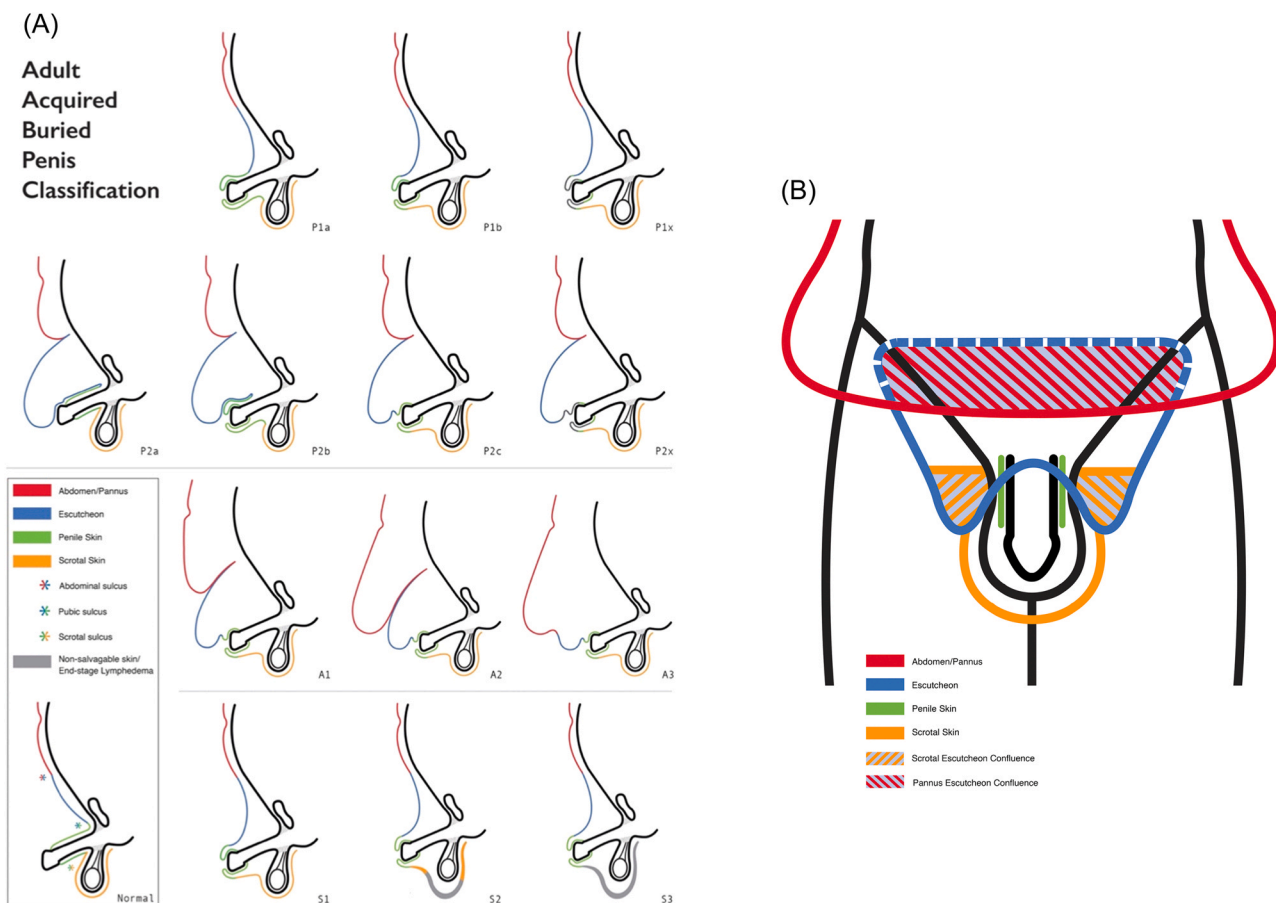


Figure 1. (A) Adult Acquired Buried Penis Classification System. Schematic of PAS classification system from sagittal representation of tissue planes for each subtype (permission from *Urologic Clinics of North America* License Number 5417840046255). (B) Adult Acquired Buried Penis Classification System: AP view. The PAS system is based on the relationship of tissue planes. The confluence, or junctures, of tissue planes of importance are demonstrated above and are the basis for the portions of both abdomen and scrotal classifications. (Color version available online.)

in Figure 2. The most common P subtypes were P2c (escutcheon + insufficient penile skin; 27%), P2a (escutcheon + sufficient penile skin; 21%), and P2x (escutcheon + phimotic/nonreducible penile skin; 16%). The most common A subtypes were A0 (no pannus; 41%) and A1 (noncontributory pannus; 39%). The most common S was S0 (normal penile skin with preserved scrotal sulcus and no lymphedema; 71%). Within the study cohort there were 17 different P/A combinations and 19 different P/S combinations (Supplementary Fig. 2). The most common combinations of all 3 PAS categories were P2cA1S0 ($n = 17$), P2aA1S0 ($n = 8$), and P2xA1S0 ($n = 7$).

Overall Surgical Techniques

AABP repairs averaged 2.3 ± 1.2 surgical components. The most common surgical components were escutcheonectomy ($n = 59$, 55%), scrotoplasty ($n = 51$, 48%), split-thickness skin grafting ($n = 50$, 47%), penile skin excision ($n = 47$, 44%) and panniculectomy ($n = 7$, 7%) (Supplementary Fig. 3).

Urethroplasty at the time of AABP repair was uncommon, only present for 2% of cases, though urethral dilation was necessary in 12% ($n = 12$) of cases to allow for catheter placement.

Repair Complexity

To represent the overall complexity of repairs, the average number of surgical components per AABP repair by subtype is shown in Figure 3. Increases of P1 and P2 subtype severity were associated with increases in the number of component procedures and therefore the complexity of the repair (within P1 $R^2 = 0.92$, and within P2 $R^2 = 0.93$). Severity of A and S subtypes were not independently associated with overall procedural complexity.

Surgical Procedures by PAS Classification

The rates of components included in AABP procedures by subtype are in Figure 4. The P classification was strongly associated with the performance of escutcheonectomy ($P < .001$), skin excision ($P < .001$), and split-thickness skin grafting ($P < .001$). Specifically,



Figure 2. PAS subtype frequency. Relative frequency of each subtype within three anatomic locations in the cohort. (Color version available online.)

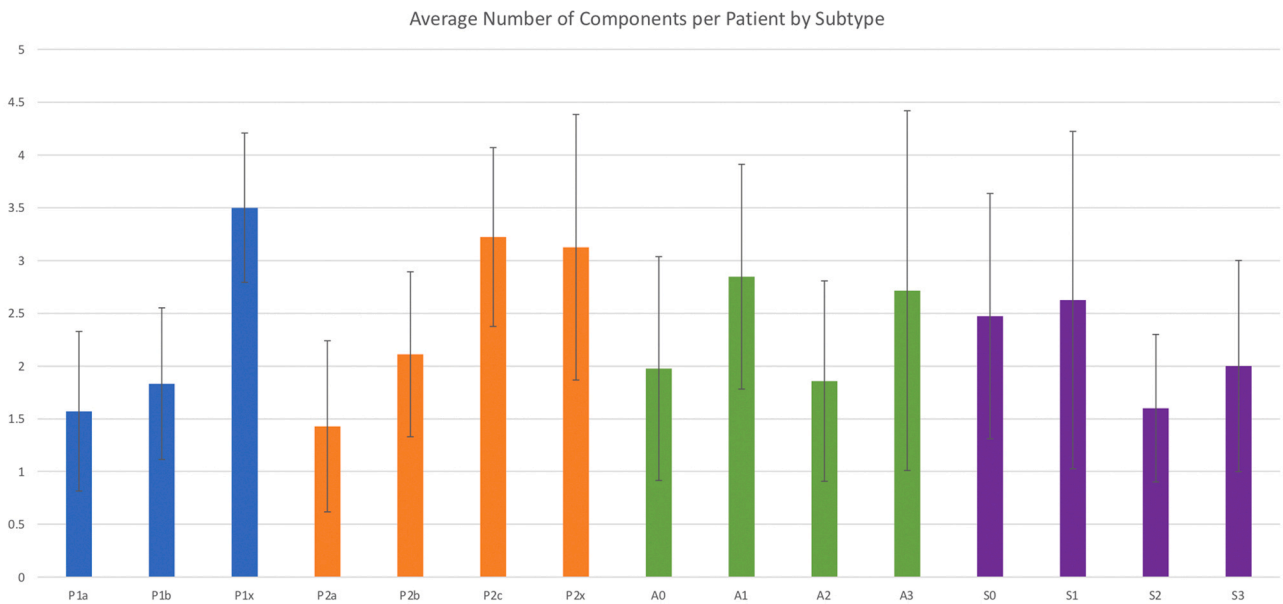


Figure 3. Surgical complexity by subtype. Average number of procedural components per patient in total repair surgery by subtypes. Error bar represents \pm standard deviation. (Color version available online.)

	Panniculectomy	Escutcheonectomy	Penile Skin Excision	Split Thickness Skin Graft	Fasciocutaneous Flap	Scrotectomy	Scrotoplasty
P1a	0%	0%	7%	0%	7%	29%	93%
P1b	0%	0%	17%	83%	8%	8%	58%
P1x	0%	0%	100%	100%	0%	50%	100%
P2a	24%	76%	5%	0%	0%	5%	29%
P2b	0%	67%	56%	44%	22%	0%	22%
P2c	4%	93%	81%	85%	0%	4%	52%
P2x	6%	75%	88%	69%	13%	13%	44%
A0	0%	24%	29%	41%	5%	20%	66%
A1	0%	97%	62%	67%	5%	3%	49%
A2	0%	43%	64%	43%	14%	0%	14%
A3	100%	71%	29%	14%	0%	14%	43%
S0	8%	75%	58%	58%	6%	3%	36%
S1	13%	38%	38%	25%	0%	38%	88%
S2	0%	0%	10%	10%	20%	30%	80%
S3	0%	18%	9%	45%	0%	18%	91%
All P1	0%	0%	18%	43%	7%	21%	79%
All P2	10%	81%	58%	52%	5%	5%	40%
A0-1	0%	60%	45%	54%	5%	11%	58%
A2-3	33%	52%	52%	33%	10%	5%	24%
S0-1	9%	71%	56%	55%	5%	6%	41%
S2-3	0%	10%	10%	29%	10%	24%	86%

Figure 4. Rate of procedural components of adult acquired buried penis repair by subtype. Total percent of each component by subtype. Pooled subtypes for “P” represent the absence or presence of a clinically significant escutcheon (P1 absent vs P2 present). Pooled subtypes for “A” represent absence or presence of clinically significant abdominal pannus (A0-1 no contributory pannus, A2-3 clinically significant pannus). Pooled subtypes for “S” represent the absence or presence of scrotal lymphedema (S0-1 absent, S2-3 present to some degree). (Color version available online.)

there were no P1 cases that underwent escutcheonectomy, while 81% of P2 cases had the escutcheon removed as part of their AABP repair. In addition, as subtypes with adequate penile skin (P1a, P2a, P2b) are increased in severity to those without sufficient skin (P1b, P2c) the performance of penile skin excision (16%-62%) and split-thickness skin grafting (9%-85%) increased accordingly.

The A classification was strongly associated with the performance of panniculectomy ($P < .001$). Importantly, all 7 (100%) of the A3 subtype patients underwent panniculectomy, while no A0-A2 subtype patients underwent panniculectomy as part of their AABP surgical procedure.

The S classification was strongly associated with the performance of scrotectomy ($P < .001$) and scrotoplasty ($P < .001$). However, the performance of scrotoplasty was more common at baseline with scrotoplasty being a component of 41% of S0/S1 cases despite the presence of “normal” scrotal tissue. Given the flexibility of scrotal tissue to aid in differing parts of the repair, scrotoplasty was much more ubiquitous especially when compared to the very low rates of escutcheonectomy or panniculectomy respectively for the “normal” P and A categories. Further analysis demonstrated scrotoplasty was performed for the majority of patients with normal scrotal

tissue (71%) and specifically in conjunction with escutcheonectomy for most patients (69%) when the escutcheon extended inferiorly lateral to the scrotal tissue. This prompted a change of the S1 classification to normal scrotal tissue with the loss of the penoscrotal sulcus and/or loss of the lateral scrotal sulcus. A full list of compared component procedure rates by subtype is in [Supplementary Table 2](#).

DISCUSSION

The PAS classification system was shown to be capable of identifying the unique subtypes of AABP with good interobserver reliability. Individual PAS subtypes were managed with combinations of procedures that matched the pathology the subtype captured, indicating that preoperative classification may be useful in directing the appropriate surgical care. Furthermore, the types of procedures performed on PAS subtypes was consistent among surgeons, indicating the preoperative physical examination findings necessary for classification also directed surgeons toward operative plans.

The purpose of any disease classification system is to help clinicians better understand heterogeneous disease conditions. In AABP, there is not only significant

variability in presentation, but also with surgical techniques, surgical goals, and measurement of surgical outcomes. A consistent disease nomenclature is vital to improving AABP outcomes. There are previously published AABP classification systems that deserve mention. A system reported by Tausch et al utilized penile skin viability at the time of surgery as a way to grade the disease process, acknowledging that the integrity of the skin often directed surgical management, as was confirmed in the present study.¹¹ A study by Pariser et al retrospectively classified AABP cases after the performance of AABP surgical repair with cases requiring more complex repairs (eg, STSG, escutcheonectomy) being labeled as more complex.¹²

Most recently, Hesse et al published the Wisconsin Classification System for AABP, which was the first to attempt classification before surgery, though only graded the disease from I to IV as a marker of surgical complexity.¹⁰ The PAS classification system validated here attempts to take the next step in developing an increasingly specific and descriptive system based on preoperative physical examination findings alone. When comparing the Wisconsin system, grades I through IV would represent 2, 11, 14, and 56 total combinations of PAS possible scores respectively. In our cohort, 8 patients would be Wisconsin I, 27 would be Wisconsin II, 36 would be Wisconsin 3, 21 would be Wisconsin IV, and 9 patients did not fall into one single group. Not only can the PAS system be applied preoperatively but it appears to capture significant granularity in patient characteristics that is not currently being represented in other prevailing systems.

Classifying a disease process is different than staging the disease because it only describes the spectrum of disease whereas staging takes the next step to determine how that classification affects clinical outcomes. A uniform classification system that can describe the disease process and relates to likely treatments establishes a baseline for then studying outcomes, developing staging and determining best surgical practice policies. Urologists are already accustomed to counseling patients on expectations and outcomes for urologic malignancies using the TNM classification system. The TNM system describes the clinically important aspects of malignancy, and then TNM variations are grouped into “stages,” often based on survival data. For benign conditions such as AABP, urologists often do not have the nomenclature to describe the clinically significant aspects of disease and they lack an easily obtainable endpoint such as mortality to then stage the disease. For example, a similar challenge was faced by the TURNS group in the development of the LSE classification system for urethral stricture disease.¹³ Many of the classifications systems that have predated the PAS have looked at surgical complexity as a way to grade the disease. We believe that

utilizing such an approach has merits but a system based on preoperative characteristics will more effectively bridge the gap between outcomes research and effective preoperative patient education and counseling.

Our analysis demonstrated several important differences between patient presentations and surgeries performed. When examining the components of AABP repairs across subtypes, penile pathology drove the ultimate complexity of surgery. At the heart of the condition, it is not surprising that penile pathology was more related to overall complexity relative to abdominal or scrotal pathology. In addition, though there were twice as many patients with A2 (contributory pannus with preserved tissue differentiation) as compared to A3 (contributory pannus with loss of tissue differentiation) disease, only A3 patients underwent panniculectomy in our cohort. This means all the A2 patients could still have a pannus contributing to ongoing burying. Distinctions like this could be very important in assessing surgical outcomes and eventually guiding clinical practice.

This study also revealed an apparent discrepancy between normal scrotal tissue and the performance of scrotoplasty. Scrotoplasty was often performed in conjunction with removal of the fat pad lateral to the scrotum that was in continuity with the escutcheon. In this sense, scrotoplasty is used to facilitate local tissue removal and skin coverage rather than just correction of inherently diseased scrotal skin. The performance of scrotoplasty to aid in the removal of lateral fat pads is often critical to the success of unburying, though could potentially contribute to lymphedema. The original classification system described previously was thus amended to allow for the designation of S1 in the setting of normal scrotal skin with the loss of the penoscrotal and/or lateral scrotal sulcus as it interacts with the escutcheon, as demonstrated in [Figure 1B](#) further describing the confluence of tissue planes.

Limitations of the study include a small sample size for many of the repair components and subtypes as well as the limited number of participating institutions, some of which were involved in the original design of the system. In addition, populations between individual surgeons had distinct differences, which is not entirely surprising given the limitations of the small cohort and significant heterogeneity of the condition. Despite these differences though, surgeons managed patients similarly by the subtypes of the PAS system. In addition, our study was retrospective and did not assess outcomes, though work on how PAS variation impacts the achievement of patient goals and surgical morbidity is ongoing. Moving forward, the PAS system could be useful in outcomes research to most effectively study AABP, set up treatment guidelines for surgeons, and counsel patients on their individual condition more effectively.

CONCLUSION

The PAS AABP Classification System is a clinically reproducible and useful tool to describe and categorize AABP. Using the system, we described the distribution and frequency of characteristics within AABP. The PAS subtypes were overall associated with intuitive surgical treatments by identified anatomic pathology, and surgeries performed within subtypes were consistent among surgeons at different institutions.

Declaration of Competing Interest

The authors have no conflict of interest to declare.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.urology.2023.04.048](https://doi.org/10.1016/j.urology.2023.04.048).

References

1. Blüher M. Obesity: global epidemiology and pathogenesis. *Nat Rev Endocrinol.* 2019;15:288–298.
2. Staniorski CJ, Rusilko PJ. The concealed morbidity of buried penis: a narrative review of our progress in understanding adult-acquired buried penis as a surgical condition. *Transl Androl Urol.* 2021;10:2536–2543.
3. Flynn KJ, Vanni AJ, Breyer BN, Erickson BA. Adult-acquired buried penis classification and surgical management. *Urol Clin N Am.* 2022;49:479–493.
4. Amend GM, Holler JT, Sadighian MJ, et al. The lived experience of patients with adult acquired buried penis. *J Urol.* 2022;208:396–405.
5. Rybak J, Larsen S, Yu M, Levine LA. Single center outcomes after reconstructive surgical correction of adult acquired buried penis: measurements of erectile function, depression, and quality of life. *J Sex Med.* 2014;11:1086–1091.
6. Alzubaidi AN, Hahn AE, Gellhaus PT, Erickson BA. Circumcision, buried penis and obesity in a contemporary cohort of patients with penile cancer. *Urol Pract.* 2019;6:243–248.
7. Manwaring J, Vourganti S, Nikolavsky D, Valente AL, Byler T. Pannus is the new prepuce? Penile cancer in a buried phallus. *Case Rep Urol.* 2015;2015:e403545.
8. Pekala KR, Pelzman D, Theisen KM, et al. The prevalence of penile cancer in patients with adult acquired buried penis. *Urology.* 2019;133:229–233.
9. Voznesensky MA, Lawrence WT, Keith JN, Erickson BA. Patient-reported social, psychological, and urologic outcomes after adult buried penis repair. *Urology.* 2017;103:240–244.
10. Hesse MA, Israel JS, Shulzhenko NO, et al. The surgical treatment of adult acquired buried penis syndrome: a new classification system. *Aesthet Surg J.* 2019;39:979–988.
11. Tausch TJ, Tachibana I, Siegel JA, Hoxworth R, Scott JM, Morey AF. Classification system for individualized treatment of adult buried penis syndrome. *Plast Reconstr Surg.* 2016;138:703–711.
12. Pariser JJ, Soto-Aviles OE, Miller B, Husainat M, Santucci RA. A simplified adult acquired buried penis repair classification system

with an analysis of perioperative complications and urethral stricture disease. *Urology.* 2018;120:248–252.

13. Erickson BA, Flynn KJ, Hahn AE, et al. Development and validation of a male anterior urethral stricture classification system. *Urology.* 2020;143:241–247.
14. McHugh ML. Interrater reliability: the kappa statistic. *Biochem Med.* 2012;22:276–282.

EDITORIAL COMMENT



The authors should be commended on this important work characterizing adult-acquired buried penis (AABP) and categorizing the heterogeneity of this disease into a reproducible system. AABP is a medically complex and emotionally fraught condition for patients. It is also one that has become increasingly common. According to most recent CDC data, the prevalence of obesity in the United States has reached 42.4%, with severe obesity 9.2%.¹ With the epidemic of obesity, more and more patients are presenting with AABP and seeking treatment. Previously, characterization and treatment of AABP was relatively ad hoc and only recently has become a topic of rigorous study.

Here the authors elaborate upon a systematic approach to AABP by categorizing the condition into three clinical components, addressing the anatomy of the penis (P), abdomen (A), and scrotum (S) and their individual contributions to AABP disease.² In this study, Schlaepfer et al provide clear illustrations of this PAS system and demonstrate high interobserver reliability of the system. By describing the framework of the illness, the authors are also able to show the distribution of the clinical burden for patients, with each clinical PAS component varying greatly and forming multiple presentation combinations. Schlaepfer et al clearly describe the assorted permutations of contributory or noncontributory es- cutcheon, contributory or noncontributory pannus, sufficient or insufficient penile skin, abnormal or normal scrotal skin, as well as preserved or nonpreserved scrotal sulcus and otherwise. Furthermore, as the authors show in their cohort, treatment of AABP is also diverse with a spectrum of treatment options, including escutcheonectomy in 55%, scrotoplasty in 48%, split-thickness skin-grafting in 47%, penile skin excision in 44%, and panniculectomy in 7% of patients. By utilizing a robust PAS classification system, further research into treatment outcomes of AABP can be better understood and evaluated.

As with any medical condition, it behooves us as clinicians to engage in shared decision-making and to determine the individual goals of care. This is particularly true for AABP with its diversity of presentation and significant potential emotional and psychological impacts. Clearly, we can all recognize that a “one size fits all” approach does not serve the AABP patient population. By establishing a framework to classify these

complex patients and noting applicable surgical approaches, we can better counsel and provide tailored treatment to our AABP patients going forward.

Declaration of Competing Interest

No disclosures or conflicts of interest.

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References

1. Fryar CD, Carroll MD, Afful J. Prevalence of overweight, obesity, and severe obesity among adults aged 20 and over: United States, 1960–1962 through 2017–2018. NCHS Health E-Stats 2020.
2. Flynn KJ, Vanni AJ, Breyer BN, Erickson BA. Adult-acquired buried penis classification and surgical management. *Urol Clin N Am.* 2022;49:479–493. <https://doi.org/10.1016/j.ucl.2022.04.009>

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AUTHOR REPLY



We believe that the development of the PAS classification system for adult-acquired buried penis (AABP) was a necessary step toward being able to answer the question of how to best treat the individual patient with this debilitating, and often humiliating, condition.^{1,2}

Just as every reconstructive urologist has their preferences on how to best manage AABP, every patient with AABP has different goals from their AABP care. Accordingly, not all AABP cases can, or should, be managed with the same techniques. This can lead to disparate views of surgical success, which can complicate counseling and can distort surgical outcomes studies.

Classification adds clarity to the situation. And assuming that a classification system captures the full extent of the disease, is agreed upon among peers, and is reproducible, classification systems themselves can remain relatively constant—while surgical techniques can be allowed to appropriately evolve. Outcomes studies can then be anchored to the classification system and more easily compared.

The next steps in AABP research will require an agreed-upon method for assessing surgical outcomes relative to patient goals.

Declaration of Competing Interest

No disclosures or conflicts of interest.

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References

1. Amend GM, Holler JT, Sadighian MJ, et al. The lived experience of patients with adult acquired buried penis. *J Urol.* 2022;208:396–405. <https://doi.org/10.1097/JU.0000000000002667>
2. Voznesensky MA, Lawrence WT, Keith JN, Erickson BA. Patient-reported social, psychological, and urologic outcomes after adult buried penis repair. *Urology.* 2017;103:240–244. <https://doi.org/10.1016/j.urology.2016.12.043>

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