PD20-05

The Impact of Surgical Technique on Glans Hypermobility

Alfredo Suarez-Sarmiento Jr., MD; Matthew Brennan, DO; Jonathan Clavell, M.D.; Vikram Lyall, B.S.; Patrick Curtin, M.D.; Alfredo Suarez-Sarmiento, MD; Tobias S. Kohler MD; Paul Perito, M.D.

AUA 2020 washington dc

PERITO UROLOGY

A World-Class Men's Health Clinic - Penile Implant Surgery

Faculty Disclosures

Paul Perito, Matthew Brennan, Tobias Kohler
are Consultant/ Independent Contractors:
Boston Scientific & Coloplast

Introduction

- The increasing observance of glanular hypermobility (GH) in men undergoing Inflatable Penile Prosthesis (IPP) surgery, has raised questions whether surgical technique has any significant impact on its prevalence.
- Recent studies have described GH prevalence as being as high as 25%.
- There are currently 2 surgical approaches for IPP implantation: the penoscrotal (PS) and infrapubic (IP) incision.
- We sought to compare perioperative results of patients receiving IPP via penoscrotal or infrapubic approach to better understand the incidence, severity, and objective surgical parameters associated with GH.

Materials and Methods

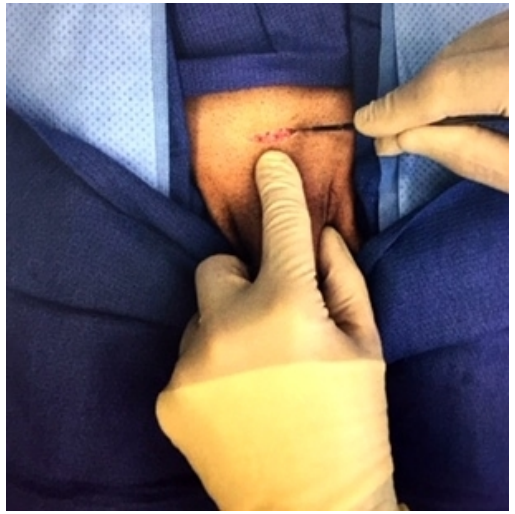
- Patients undergoing IPP surgery for erectile dysfunction were identified from our multi-institutional IRB approved database.
- A retrospective study of three high volume implant surgeons was conducted.
- GH grading was performed and recorded at the time of surgery over an 18-month period.
- Surgical technique, implant type, date of surgery, patient age, revisional status, implant size, and patient comorbidities were recorded.
- Logistic regression, chi-square and Wilcoxon rank sum tests were performed.

Grading scale

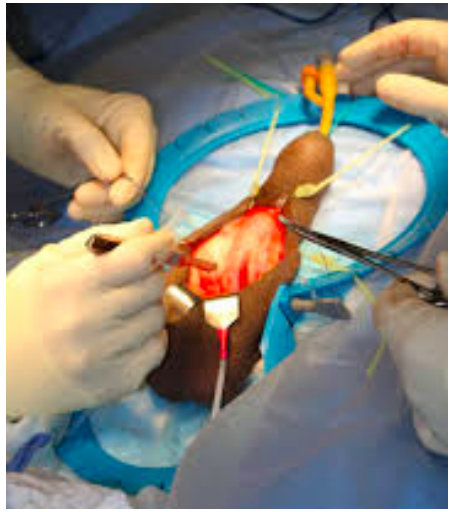
	Glans Hypermobiltiy Scale
Grade	deformity severity scale
0	demonstrates no hypermobility and would typically described as excellent glans seating
1	glanular instability overlying the corpora but does not allow IPP tip(s) to be felt outside the glans with maximal device inflation
2	instability allowing deflection and palpation of a single distal device cylinder (most common scenario occurs when there is a wide device and the glans is relatively small)
3	instability allowing deflection and palpation of both distal device cylinders
Direction	glanular deflection is denoted where the IPP tips are present outside the glans: L (Lateral), V (Ventral), D (Dorsal).

- Kohler et. al 2018

Does Technique Impact Hypermobility?



Infrapubic



Penoscrotal

Infrapubic Approach

- No scrotal incision
- Early instruction for the patient
- Early pump manipulation

The Penoscrotal Approach

- Surgeons believe exposure is better
- Measurement easier
- Drawback more difficult rehabilitation
- Longer time to activation

In reality, a well done IF or PS implant should be identical in PX satisfaction.

Results

- 707 patients were evaluated in this series. Of these patients, 600 (86.1%) were performed infrapubic, while 107 (13.9%) were performed penoscrotal.

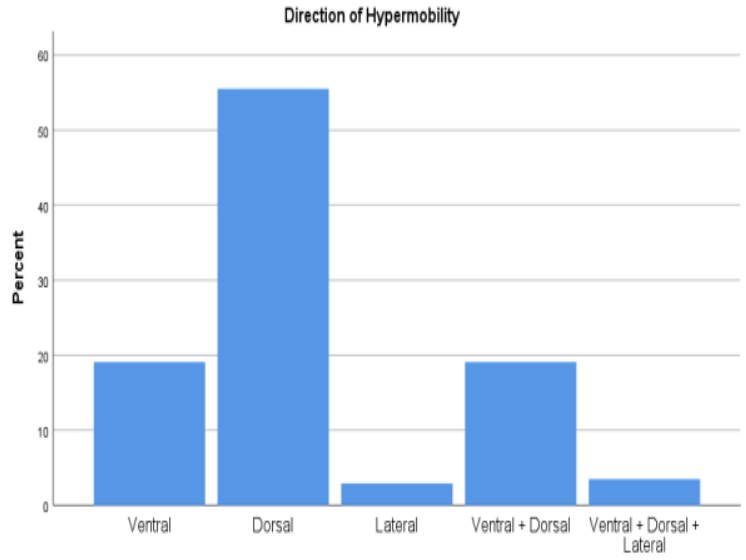
- GH was shown to be present in 24.5% of patients (n = 173).
- Of these patients 104 (60.1%) had Grade 1
- Grade 2 was found in 37 (21.4%) patients
- Grade 3 was found in 32 (18.5%) patients.

- 55.5% of patients had solely dorsal directional deflection
- 19.1% demonstrated dorsal and ventral deflection
- 19.1% demonstrated solely ventral deflection
- 2.9% demonstrated lateral deflection.

- IP technique yielded a GH incidence of 24.5%, while PS yielded 24.53%.

Grade of Hypermobiltiy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grade 1	104	14.7	60.1	60.1
	Grade 2	37	5.2	21.4	81.5
	Grade 3	32	4.5	18.5	100.0
	Total	173	24.5	100.0	
Missing	System	534	75.5		
Total		707	100.0		



Results

- Logistic regression determined that surgical technique had no correlation with GH.
- Increased implant size was found to be correlated with decreased likelihood of detecting GH (p = 0.05).
- Non-revision cases were correlated with higher incidence of GH (p= .001, OS= 1.01).
- Additionally, each increase in implant size by 1 cm decreased the incidence of detecting GH by 12%.
- Implant size was a predictor of GH as well as D, V, and DV direction (p = .006).

Logistic Regression

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Implant Size (cm)	-0.119	0.042	7.883	1	0.005	0.888	0.817	0.965
	Revision	-0.820	0.243	11.412	1	0.001	0.441	0.274	0.709
	Surgical Technique	-0.080	0.256	0.098	1	0.754	0.923	0.559	1.523
	Constant	1.536	0.940	2.672	1	0.102	4.647		

a. Variable(s) entered on step 1: Implant Size (cm), Revision, Surgical Technique.

Conclusion

- GH is a frequently encountered surgical entity with a prevalence of 24.5%.
- Surgical technique had no statistically significant correlation with GH.
- While optimal intervention for GH is unknown, it's relatively high incidence should influence patient counseling.
- Further studies aimed at understanding associated and contributing factors, as well as optimal management are warranted to improve surgical outcomes for penile prosthesis patients.

The Impact of Surgical Technique on Glans Hypermobility

Alfredo Suarez-Sarmiento Jr., MD; Matthew Brenan, DO; Jonathan Clavell, M.D.; Vikram Lyall, B.S.; Patrick Curtin, M.D.; Alfredo Suarez-Sarmiento, MD; Tobias S. Kohler MD; Paul Perito, M.D.

Introduction:

The increasing observance of glanular hypermobility (GH) in men undergoing Inflatable Penile Prosthesis (IPP) surgery, has raised questions whether surgical technique has any significant impact on its prevalence. Recent studies have described GH prevalence as being as high as 25%. There are currently 2 surgical approaches for IPP implantation: the penoscrotal (PS) and infrapubic (IP) incision. We sought to compare perioperative results of patients receiving IPP via penoscrotal or infrapubic approach to better understand the incidence, severity, and objective surgical parameters associated with GH.

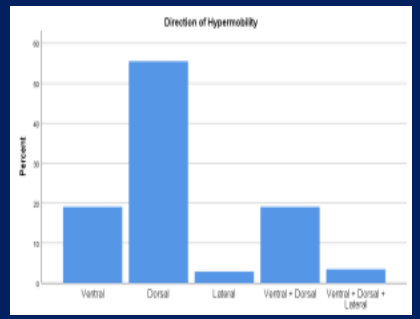
Materials and Methods

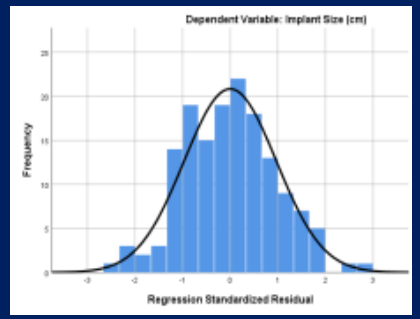
Patients undergoing IPP surgery for erectile dysfunction were identified from our multi-institutional IRB approved database. A retrospective study of three high volume implant surgeons was conducted. GH grading was performed and recorded at the time of surgery over an 18-month period. Surgical technique, implant type, date of surgery, patient age, revisional status, implant size, and patient comorbidities were recorded. Logistic regression, chi-square and Wilcoxon rank sum tests were performed.

Logistic Regression

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	95% C.I.for EXP(B) Upper
Step 1[a]	Implant Size (cm)	-0.119	0.042	7.883	1	0.005	0.888	0.817	0.965
	Revision	-0.820	0.243	11.412	1	0.001	0.441	0.274	0.709
	Surgical Technique	-0.080	0.256	0.098	1	0.754	0.923	0.559	1.523
	Constant	1.536	0.940	2.672	1	0.102	4.647		

a. Variable(s) entered on step 1: Implant Size (cm), Revision, Surgical Technique.





Grade of Hypermobiltiy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grade 1	104	14.7	60.1	60.1
	Grade 2	37	5.2	21.4	81.5
	Grade 3	32	4.5	18.5	100.0
	Total	173	24.5	100.0	
Missing	System	534	75.5		
Total		707	100.0		

Results

707 patients were evaluated in this series. Of these patients, 600 (86.1%) were performed infrapubicly, while 107 (13.9%) were performed penoscrotally. GH was shown to be present in 24.5% of patients (n = 173). Of these patients 104 (60.1%) had Grade 1, Grade 2 was found in 37 (21.4%) patients, and grade 3 was found in 32 (18.5%) patients. 55.5% of patients had solely dorsal directional deflection, 19.1% demonstrated dorsal and ventral deflection, 19.1% demonstrated solely ventral deflection, and 2.9% demonstrated lateral deflection. IP technique yielded a GH incidence of 24.5%, while PS yielded 24.53%. Logistic regression determined that surgical technique had no correlation with GH. Increased implant size was found to be correlated with decreased likelihood of detecting GH (p = 0.05). Non-revision cases were correlated with higher incidence of GH (p= .001, OS= 1.01) Additionally, each increase in implant size by 1 cm decreased the incidence of detecting GH by 12%. Implant size was a predictor of GH as well as D, V, and DV direction (p = .006).

Conclusion

GH is a frequently encountered surgical entity with a prevalence of 24.5%. Surgical technique had no statistically significant correlation with GH. While optimal intervention for GH is unknown, it's relatively high incidence should influence patient counseling. Further studies aimed at understanding associated and contributing factors, as well as optimal management are warranted to improve surgical outcomes for penile prosthesis patients.