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Review Of The Pattern Of Chronic Catheterization And Associated Factors. A Single Centre Retrospective Study In Aba, South Eastern Nigeria

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Abstract
Catherization is routine medical procedure that facilitates urinary drainage when there is bladder outlet or urethral obstruction and therefore can be urethral or suprapubic.
It can be used intermittently or indwelling on a short or long term. As useful as it is, Catheterization especially the long term indwelling type has several complications or adverse effects.
This study was done to review the pattern of long term indwelling catheter use- its indications and associated factors.
It was a retrospective study spanning 5 years from January 2019 to December 2023.
A total of 198 new cases were seen. The least age was 29 years and the eldest was 94 years.
Mean age was 64 while median age was 68.5 years s(variance=6.8)+ 0r-3sd
155 (78%) had urethral Catheterization while 43 (21.7%) had suprapubic Catheterization.
The most common indication was symptomatic Benign prostate enlargement (BPH) with 92 cases (46.4%) closely followed by advanced prostate cancer with 75 cases (37.7%).
This was followed by Urethral stricture disease (USD) with 18 cases (9.1%).
The most common cause of urethral stricture disease (USD) was trauma occasioning urethral injury and later stricturing with 8 cases (44.4%) closely followed by catheter related factors with 5 cases (27.8%).
115 patients (58.1%) were found to be in the low socio- economic class.
Long term indwelling Catheterization is a common feature in Aba and BPH is the leading cause. The most common incidence is in the low socio-economic class as poor finance was a major contributory factor.
Keywords: *Long term indwelling Catheterization, Indications, associated factors and Aba.*

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I. Introduction:

Catheterization is a routine medical procedure that facilitates urinary drainage from bladder.
There are 3 main forms of Catheterization
- Intermittent/ self Catheterization
- Condom Catheters
- Indwelling Catheters

Intermittent Catheterization is one where a Catheter is inserted as an in and out procedure for immediate evacuation of urine followed by removal of the Catheter and it is usually urethral.

Condom Catheter is used for patients with incontinence and not for patients with bladder outlet obstruction as there is no device insertion through the Urethra into the bladder.

Indwelling Catheterization involves the passage of placement of a catheter for a time. It may be for a short time or a long term.

An indwelling catheter is said to be of a short time if the catheter remains in the bladder for less than one month.

It is a long term Catheterization if the Catheter remains in the bladder beyond one month. A long term Catheterization may be described as chronic Catheterization if the Catheter remains in the bladder for more than three months.

Catheterization may be for diagnostic or therapeutic purposes.

Diagnostic indications include:

- Collection of uncontaminated urine specimen for pathological examinations.
- Monitoring of urine output
- Imaging of the urinary tract especially contrast studies.

Therapeutic indications include:

- Management of acute urinary retention
- Management of chronic urinary retention
- For continuous bladder irrigation in gross haematuria and pyuria
- For the care of the bedridden patients
- Intermittent decompression in neurogenic bladder

As useful as Catheterization is, it has so many complications which include:

- Bacteraemia and urinary tract infections.
- Epididymitis and epididymorchitis
- Retained balloon fragments
- Bladder fistula
- Bladder perforation
- Bladder stone formation
- Urethral trauma, injury with subsequent stricture formation
- Gross haematuria
- Scrotal abcess
- Prostatitis
- Urethral fistula
- Pains and discomfort

The longer a catheter remains in the bladder, the higher the risk of bacterial infection (Majumder etal 2014)

Therefore, to prevent the occurrence or reducing the incidence of these complications, Catheter should be placed as a last resort after all other alternatives have been exhausted and should be removed as soon as possible (pratt etal 2007), and (Loveday etal 2014) and (Royal College of Nursing 2019).

Catheters are linked to increased morbidity, mortality, longer hospital stay and higher hospital costs (Quinn 2015)

II. Methodology

This was a retrospective study aimed at reviewing the indications for long term indwelling Catheter use and its associated factors.

The study spanned a period of five years from January 2019 to December, 2023.

198 new cases were seen. Their case files were withdrawn and relevant information retrieved such as age, definitive diagnosis, treatments offered after investigations.

Inclusion Criteria

All new cases seen within the study period who had been on indwelling urinary catheter for 3 months and beyond were part of this study.

Exclusion criteria

Cases that were less than three months were excluded. The duration of three months was assumed to be enough time to investigate and institute definitive treatment.

III. Results

The most common indication for long term Catheterization was symptomatic BPE with 92 cases (46.5%) closely followed by advanced prostate cancer with 75 cases (37.9%).

Urethral stricture disease (USD) had 18 cases (9.1%) the most common cause of USD was trauma with 8 cases (44.4%) followed by Catheter related factors with 5 cases (27.8%).

Catheter related factors included:

- Traumatic Catheterization
- Toxic Catheter reaction
- Balloon inflation in the urethra
- Removal of Catheter with partially deflated balloon.

The incidence of gonococal urethritis was found to be low.

92 cases (46.5%) were found in the low educational class while 115 (58.1%) were found in the low socio-economic class.

Some of the reasons for chronic Catheter use include:

- Poor finance for surgery
- Fear of surgery especially fear of a second surgery after initial cystostomy procedure
- Associated co-morbidities.

Table 1
Showing the New cases of chronic Catheter use in each year

S/no	Year	Total	Urethral	SPC
1	2019	28	20	8
2	2020	34	27	7
3	2021	40	32	8
4	2022	46	35	4
5	2023	50	41	9
	TOTAL	**198**	**155**	**43**

Table 2
Showing the Age group disposition of the cases

S/no	Age Group	Total	Urethral	Supra Pubic
1	30-40	5	Nil	5
2	41-50	21	15	6
3	51-60	45	37	8
4	61-70	58	47	11
5	71-80	52	43	9
6	81-90	15	11	4
7	91-100	2	2	Ni;
	TOTAL	**198**	**155**	**43**

Table 3
Showing the aetiological factors responsible for chronic catheter use

S/no	Disease Condition	Total	Urethral	SPC
1	Benign prostate hyperplasia	92	84	8
2	Advanced Prostate cancer	75	58	17
3	Urethral stricture disease	18	-	18
4	Incapacity/ immobility from chronic illnesses	10	10	Nil
5	Intractable incontinence	3	3	Nil
	TOTAL	**198**	**155**	**43**

Table 4
Showing the indications for catheterization

S/no	Indication	Number	Percentage
1	Symptomatic benign prostate enlargement (BPE)	92	46.5%
2	Advanced Prostate cancer	75	37.9%
3	Urethral stricture disease (USD)	18	- 9.1%
4	Incapacity/ immobilization	10	5.1%

5	Intractable incontinence	3	1.5%
	TOTAL	**198**	**100%**

Table 5
Showing the aetiological factors responsible for urethral stricture disease

S/no	AETIOLOGICAL FACTORS	Number	Percentage
1	Trauma	8	44.4%
2	Catheter related factors	5	27.8%
3	Urethritis of distant past	4	22.2%
4	Idiopathic	1	5.6%
	TOTAL	**18**	**100**

Table 6
Showing the educational status of the patients

S/no	Educational level	Number	Percentage
1	Primary level	92	46.5%
2	Secondary level	65	32.8%
3	Tertiary level	41	20.7%
	TOTAL	**198**	**100%**

Table 7
Showing the Socio-economic status of the patients

S/no	Socio-economic class	Number	Percentage
1	Low income group	115	58.1%
2	Medium income group	58	29.3%
3	High income group	25	12.6%
	TOTAL	**198**	**100%**

IV. Discussion

Catheterization entails the introduction of foreign body into the human body. Even though it has various diagnostic and therapeutic uses, it associated with a range of complications or adverse effects such as:

- Stone formation
- Catheter blockage
- Catheter dislodgment
- Bladder spasms
- Symptomatic bacterial infections
- Trauma to the urethra
- Hypersensitivity
- Psychological complications such as loss of dignity, noxious ammoniacal smell of urine, Sexual impairment, restrictive sexual intercourse and loss of finance.

All these factors contribute to poor quality of life.

In our study, we found out that Symptomatic benign prostate enlargement was the most common indication for catheterization closely followed by advanced prostate cancer. We also found out that trauma was the most common cause of urethral stricture disease and that chronic catheterization was most prevalent in the low socio-economic class.

In a study by Asteria L.M. NDOMBA etal in 2021 on the prevalence and indications of long term indwelling catheters among outpatients at a tertiary hospital in North Western Tanzania East Africa, they also had BPE as the most common indication for chronic catheterization – 129 out of 202 patients (63.9%) followed by urethral stricture disease 34 (16.8%). They also found out that the reasons for chronic catheterization especially for those not included in the national health insurance scheme were:

- Endless appointments
- Poor finance for surgery
- Associated co-morbidities

They concluded that the prevalence of long term indwelling catheterization is high.

In another study by Jubril Oyekan Bello etal in February 2013 on the prolonged use of indwelling urinary catheters following acute urinary retention in tertiary care centers in Sub-Saharan Africa, had urethral stricture disease as the most common indication (52.6%) followed by BPE with (47.4%)

They also found out that the reasons for chronic catheter use were:

- Poor finance for surgery

 Long waiting list

They also found out that quality of life was significantly affected with disruptive sexual relationships.

A similar study in Ghana by EMT Yenli etal on acute and chronic retention among adults at the urology section of the accidents and emergency unit of Komfo Anokye Teaching Hospital Kumasi in August 2015 found out BPE was the most common indication (58.1%) followed by urethral stricture disease (14.7%) and prostate cancer (13.1%).

From our study and other works mentioned, the following factors were responsible for the chronic catheter use:

- Poor finance
- Fear of surgery
- Co-morbidities
- Long waiting operation list

V. Conclusion

Indwelling urinary catheters should be placed only when it is absolutely necessary. Necessary efforts should be made to deal with the offending pathology so as to wean patient from catheter use as soon as possible because of its associated complications and poor quality of life.

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