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Surgical Haematuria: A Review Of Cases Of Gross Haematuria In An Adult Population In A South Eastern City In Nigeria.

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Abstract
Gross Hematuria, otherwise called Macroscopic Hematuria and visible Hematuria is a Urological symptom that brings alarm, anxiety and distress to the patient.
Gross Hematuria can be caused by medical conditions but this study was undertaken to review the cases of Hematuria due to surgical causes in an adult population.
It was a retrospective study spanning 5 years from January 2015 to December 2019 in a urological center in Aba, Nigeria.
A total of 185 cases were treated within the study period but 30 of these could not be completely investigated so as to establish definitive diagnoses and were therefore excluded from this study leaving 155 cases.
The youngest person was 43 years while the oldest was 92 years with a mean age of 55 years.
The age group 71-80 years had the highest incidence of 54 (34.8%), closely followed by the age group 61-70years with 42 cases (27.1%)
Prostate cancer 60 cases (38.7%) was the most common cause while benign prostate Hyperplasia (BPH) followed with 53 cases (34.1%).
On the whole prostatic causes constituted a total of 113 cases (72.9%).
Benign causes of gross Hematuria were 83(55.3%) while Malignant causes were 67 (44.7%).
Of the 155 cases, 134 (86.5%) were seen in adult males while 21 (13.5%) were seen in adult females.
Of the 53 cases of BPH, 33 (62.3%) had intravesical protrusion of the median lobe while 13 (24.5%) had no intravesical protrusion but were more than 100g by ultrasound measurement. Only 7 (13.2%) were below 100g in weight and had no intravesical protrusion.
Prostate cancer was the leading cause of Hematuria in Aba closely followed by BPH.
Keywords: *Gross Haematuria, causes, adult population and Aba.*

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I. Intoduction

Gross Hematuria otherwise called macroscopic or visible Hematuria is an alarming urological symptom.

It can also be a forerunner of a malignant condition and so must be thoroughly investigated to establish a definitive Diagnosis.

Gross Hematuria can be of surgical or medical origin.

Whereas medical Hematuria may be associated with proteinuria and casts in the urine, the red blood cells appear to be of different shapes and sizes with unequal distribution of Hemoglobin.

In surgical Hematuria, the red blood cells appear to be round and of equal shapes and sizes.

Hematuria can also be microscopic or non-visible defined as the presence of three or more red cells in a single urine specimen.

Classically, gross Hematuria can be divided into

- **INITIAL HEMATURIA** where bloody urine is first passed and subsequent urine is clear. Often the pathology is urethral in origin.
- **TOTAL HEMATURIA** where the urine is uniformly mixed with blood from the beginning to the end of urination. Often the pathology is above the bladder neck.
- **TERMINAL HEMATURIA** in which urine is bloody at the end of urination. Often the pathology is at the bladder neck in origin.

Gross Hematuria can also be described as painful when associated with clots, calculus and infection. It can also be described as painless when there is no associated pain.

The presence of red urine and clots suggests large volume bleed while pink coloured urine suggests low volume bleed.

Hematuria of prostatic origin is often accompanied by other features such as lower urinary tract symptoms (LUTS) and abnormal findings on digital rectal examination (DRE).

Hematuria associated with worm like or a serpentine clot suggests upper tract origin.

The association of Hematuria with Necroturia may suggest bladder origin.

The reason for the alarm and anxiety in Hematuria is the fear of sinister causes such as renal, urothelial and prostatic cancers. Therefore, a comprehensive evaluation is required especially when the patient is 40 years and above.

Renal cell cancer (Adenocarcinoma) presents with the classical Triad of Hematuria, Loin pains and Loin mass.

Transitional cell carcinoma of the bladder presents with intermittent, painless total Hematuria associated with Necroturia and irritable symptoms.

Prostate cancer presents with Hematuria with or without LUTS but maybe associated with elevated prostate specific antigen (PSA) and abnormal findings on DRE.

It is because of these malignant causes that full evaluation is required such as

- Urine cytology
- Plain X-ray KUB
- Abdomen /Pelvis Ultrasound.
- Intravenous Urogram
- Computerized Tomography (CT SCAN)
- CT-Urogram which has replaced Intravenous Urogram and CT Scan in evaluation of Hematuria.
- Endoscopy and Endoscopic Biopsy for Histopathological diagnosis.

An established diagnosis warrants immediate management.

While the mechanism of Hematuria may be unknown, in benign prostate Hyperplasia (BPH) and prostate cancer.

It is due to ANGIOGENESIS- new fragile blood vessels supplying the new growth which easily bleeds.

II. Methodology

This was a retrospective study of cases of Gross Hematuria spanning 5 years from January 2015 to December 2019.

The patients where gotten from a major urological center in Aba involving both in and out patient cases.

Their case files were withdrawn and relevant information obtained.

Such relevant information included the age, date of presentation with Hematuria, investigations employed, Diagnosis and treatment given.

Such information were collated, analyzed and interpreted.

Inclusion Criteria

Adult patients males and females who presented and were investigated to make diagnosis within the study period were part of this study.

Exclusion Criteria

Adult males and females who presented within the study period but were not investigated to make a diagnosis were excluded from the study.

III. Results

Table 1 showing Demographic characteristics of participants n=155

S/NO	Variable Age in year	Outcome
1	mean age	55 yrs
2	range	43-92yrs

Table 2 Showing demographic characteristics participants n=155

S/NO	Age group	Number	Percentage
1	40-50 yrs	2	1.9%
2	51-60 yrs	17	10.9%
3	61-70 yrs	42	27.1%
4	71-80 yrs	54	34.8%
5	81-90 yrs	37	23.9%
6	91-100 yrs	3	1.9%
	Total	155	100%

The 71-80 age groups had the highest incidence of Gross Hematuria 54 (34.8%)

Bar chart. Fig. 1

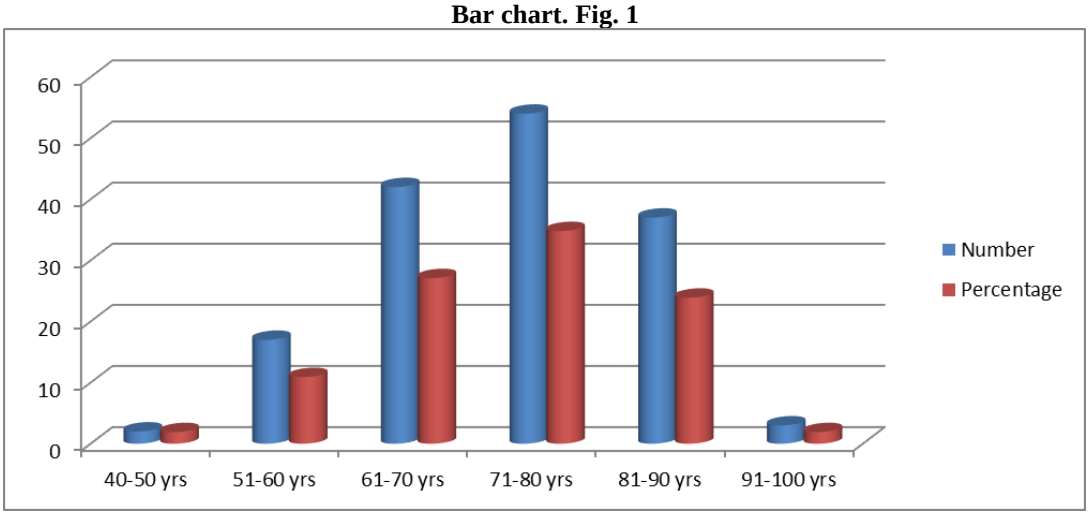

Table 3 Showing the Established causes of Hematuria.

S/NO	Causes	Number	Percentage
1	Prostate cancer	60	38.7%
2	Benign prostate Hyperplasia (BPH)	53	34.1%
3	Post obstruction Hematuria	10	6.5%
4	Calculus	9	5.8%
5	Urinary Tract Infections	8	5.2%
6	Gross Hematuria of Undetermined Origin	5	3.2%
7	Bladder cancer	4	2.6%
8	Renal cancer (renal Cell CA)	3	1.9%
9	Urinary Tract Trauma	3	1.9%
	Total	155	100%

Bar chart Fig.2

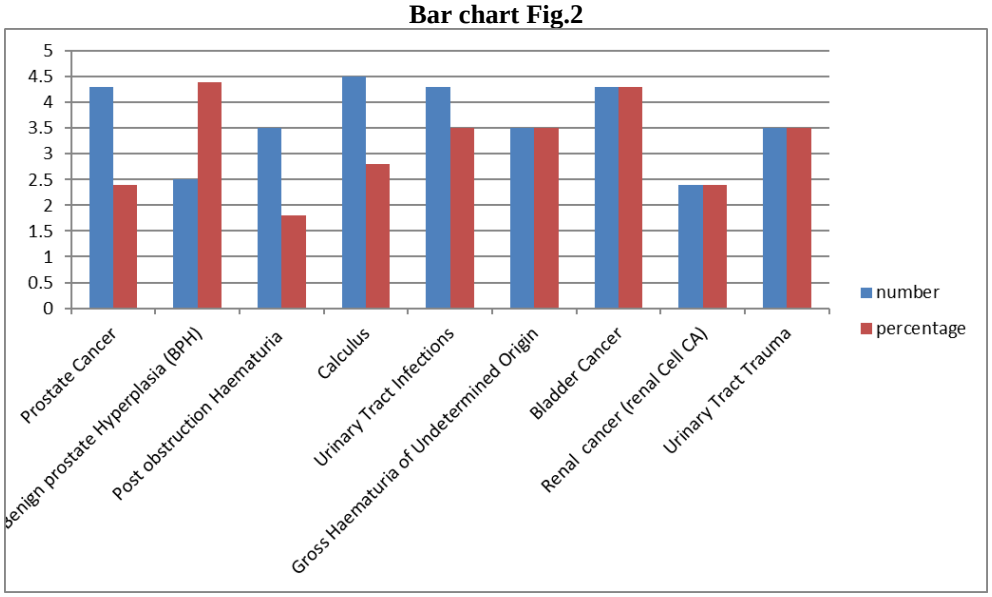

Table 4- showing the sex distribution of the causes of Gross Hematuria.

S/NO	Causes	Male	Female	Total
1	Prostate cancer	60	NIL	60
2	Benign Prostate Hyperplasia (BPH)	53	NIL	53
3	Post obstruction Hematuria	10	NIL	10
4	Calculus	3	6	9
5	Urinary Tract Infections	3	5	8
6	Hematuria of Undetermined Origin	1	4	5
7	Blader Cancer	1	3	4
8	Renal Cancer	1	2	3
9	Traumato Urinary Tract	1	2	3
	Total	**134**	**21**	**155**

Table 5- Showing Characteristics of the cases of benign Prostate Hyperplasia (BPH) n=53.

S/No	Characteristics	Number	Percentage
1	Intravesical protrusion of the median Lobe	33	62.3%
2	Prostate Weight more than 100g (> 100g)	13	24.5%
3	Others (Neither 1 and 2)	7	13.2%
	Total	**53**	**100%**

Above table may suggest that intravesical Protrusion of median lobe and prostate weight above 100g may be contributory to incidence of Hematuria.

Bar chart Fig.3

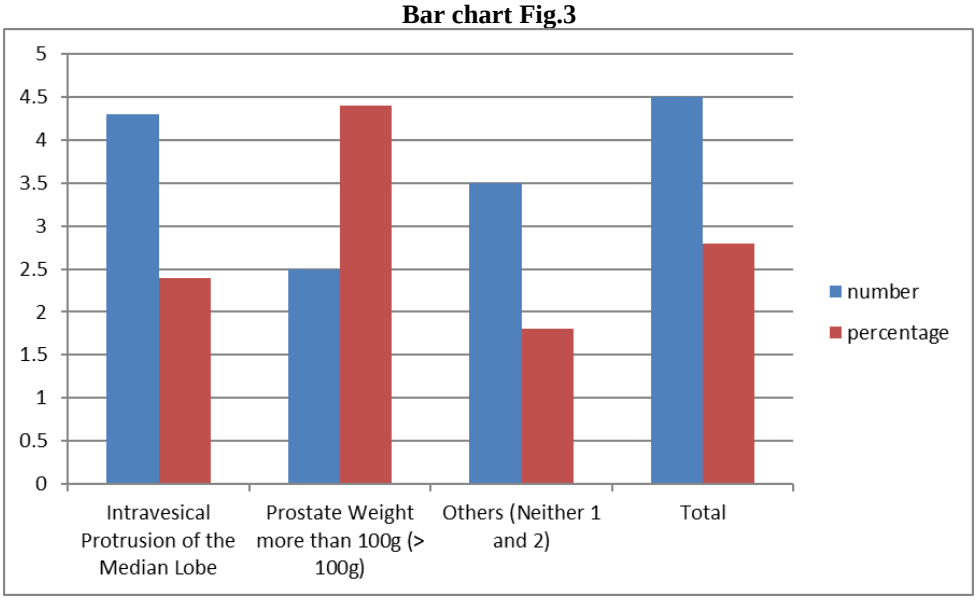

Table 6-Showing the Incidence of Benign and Malignant Cases.

S/No	Nature of Creative Agent	Number	Percentage
1	Benign cases	83	55.3%
2	Malignant Cases	67	44.7%
3	**Total** **Less Hematuria of Undetermined Origin**	**150**	**100%**

IV. Discussion

Gross Hematuria as a Urological symptom is quiet frightening and therefore comprehensive evaluation is absolutely necessary to establish a diagnoses in our work, we found out that malignant causes constituted 44.7% of the cases while benign causes constituted 55.3% of the cases.

Hematuria of prostatic origin constituted 72.9% of the cases.

Prostate cancer was the most common cause of Gross Hematuria 38.7% followed by benign prostate Hyperplasia (BPH) 34.1%.

This maybe due to the surge in the incidence of prostate cancer recently and also to increased awareness and screening practices enhancing diagnosis.

Victor Obisike Ofuru etal, In their work and surgical Hematuria: an analysis of causes in a southern Nigerian State had BPH as the most common caused 36.4% followed by prostate cancer 19.08% while calculus (Urolithiasis) came third with 11.56%.

On the whole, benign causes constituted 67.06% while malignant cases constituted 32.74%.
They concluded that the most common cause of gross Hematuria was prostatic in origin.

M.A Ogunjimi etal, in their work on Gross Haematuria among adult Nigerians had BPH as the most common cause 30.4% followed by bladder cancer 12.6% and then prostate cancer 10.1%.

They concluded that there is a changing trend in the Aetiologies of Gross Hematuria among adult Nigerian patients with urological malignances now more prevalent than was previously reported in our environment.

Daben Dawan etal, in their work on Hematuria in Africa: is the pattern changing concluded that Schistosomiasis which used to be a very common cause of Hematuria is now an uncommon cause of Hematuria.

In their series of 100 adult patients, BPH, Trauma, Infection, Malignancy and calculus accounted for 90% of the cases.

V. Conclusion

Prostate cancer is the leading cause of Gross Hematuria of surgical origin in Aba followed by benign prostate Hyperplasia.
On the whole, majority of the cases are of prostatic origin.

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