

## The Techniques of Retrograde Uretrocystography at the Radiology Department of the “Point G” University Hospital Center

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DOI: [10.36347/sjams.2023.v11i06.029](https://doi.org/10.36347/sjams.2023.v11i06.029)

Received: 13.05.2023 | Accepted: 19.06.2023 | Published: 24.06.2023

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### Abstract

### Original Research Article

**Introduction:** Retrograde urethrocytography (UCR) is a radiographic examination allowing to make visible the urethra and the bladder by direct retrograde opacification with a water-soluble iodinated contrast product. The aim of our work was to evaluate the epidemiological profile of the techniques of the UCR in the radiology department of the CHU point G. **Methodology:** This was a prospective and descriptive study concerning all elderly subjects addressed for UCR in the CHU HPG. A televised remote-controlled table was used with saline and contrast product (omnipaque). The parameters studied were socio-epidemiological factors. **Results:** We had collected 19 patients for UCR, i.e. 1.47% of cases. 100% of the UCR examinations performed were male. The age group  $\geq 50$  years was the most frequently encountered with 36.84% of cases. Workers were the most represented profession with 47.36% of cases followed by farmers (21.05% of cases) and the military (15.78% of cases). The majority of UCR examinations came from the urology department of the CHU point “G” with 2.47% of cases. Dysuria was frequently encountered among the examinations with 47.36% of cases followed by trauma in 21.05% of cases). **Conclusion:** A good mastery of UCR techniques by all imaging technicians would be necessary for better management.

**Keywords:** Urinary system, retrograde urethrocytography (UCR), radiology and G-spot CHU.

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## INTRODUCTION

The urinary tract is a set of organs, responsible for producing and expelling urine outside the body, it is composed of the kidneys which produce urine, the ureters, the bladder and the urethra [1, 2]. Uretrocystography (UCR) is a radiographic imaging examination that can highlight malformations or vesico-uretero-renal reflux, it is a technique that can be used by both sexes (male and female) and more suitable for subjects adults [2]. Retrograde cystourethrography is a radiographic examination to make the urethra and bladder visible by direct retrograde opacification with a water-soluble iodinated contrast agent [3]. It allows both a morphological and dynamic study of the urethra and the bladder is retrograde voiding urethrocytography. It is a technique using 20 to 30 ml of PDC (omnipaque) in 100 ml of physiological serum and takes place in three (03) ways which are voiding retrograde urethrocytography (UCRM) [4], urethrocytography by above-mentioned puncture pubis

[5] and voiding urethrocytography during intravenous urography [6]. In Mali, little work on the techniques of urethrocytography has been undertaken, despite the training at the INFSS of technicians and medical assistants in medical imaging. This examination being much more practiced at the CHU du point G, this work proposes to evaluate the epidemiological profile of the techniques of the UCR in the radiology department of the CHU du Point "G"

## METHODOLOGY

This was a prospective descriptive study which took place over a period of 03 months, concerning all patients addressed to the radiology department of the CHU-HPG for UCR, or having clinical information in favor of vesico pathologies -urethral. A televised remote control table was used with leaded apron, leaded glove, cassette. Physiological serum, contrast product (omnipaque) were also used with urinary catheter, 60cc syringe, compress and gloves. The performance of the

**Citation:** Traore D., Traore G., Traore Ousmane, Thiam A., Sidibé B., N'Diaye M., Diarra O., Guindo I., Cissé I., Coulibaly S., Diallo M., Keita A. D.. The Techniques of Retrograde Uretrocystography at the Radiology Department of the “Point G” University Hospital Center. Sch J App Med Sci, 2023 Jun 11(6): 1159-1163.

UCR examination responded to one of its three techniques: voiding retrograde urethrocytography (UCRM), urethrocytography by suprapubic puncture and voiding urethrocytography during intravenous urography. The parameters studied were the socio-epidemiological factors of the patients.

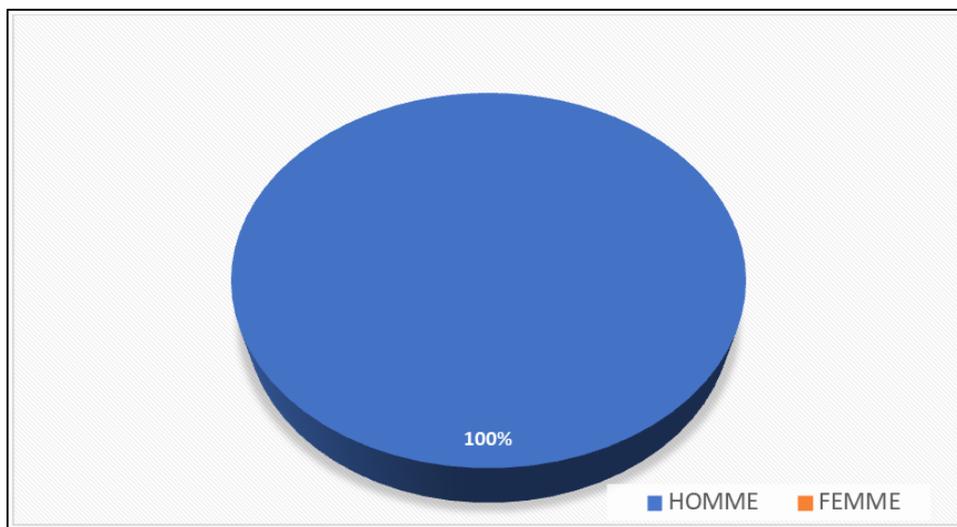
## RESULTS

The overall frequency of UCR was 1.47% of cases out of 1292 radiological examinations carried out during the study period (Table I).

**Table I: Distribution of examinations according to frequency**

X-Rays	Number	Percentage
Thorax	408	31,57%
Lumbosacral spine	132	10,21%
IVU	05	0,38%
UCR	19	1,47%
HSG	00	0,00%
ASP	81	06,26%
Other bones	647	50,07%
<b>TOTAL</b>	<b>1292</b>	<b>100%</b>

100% of the UCR examinations performed were male. There was no female gender (Figure1).



**Figure 1: Distribution of UCR exams by gender**

The age group of  $\geq 50$  years was the most frequently encountered with 36.84% of cases followed by the age group of 30 -49 years (Table II).

**Table II: Breakdown of ucr examinations by age**

Age Range	Male Sex	Female Sex	Total	Percentage
0 - 9 YEARS	2	0	2	10,52%
10 -19 YEARS	2	0	2	10,52%
20 - 29 YEARS	1	0	1	5,26%
30 - 39 YEARS	4	0	4	21,05%
40 - 49 YEARS	3	0	3	15,78%
$\geq 50$ YEARS	7	0	7	36,84%
<b>TOTAL</b>	<b>19</b>	<b>0</b>	<b>19</b>	<b>100</b>

Workers were the most represented profession with 47.36% of cases followed by farmers (21.05% of cases) and the military (15.78% of cases) (Table III).

**Table III: Breakdown of examinations according to profession**

Occupation	Workforce	Percentage
Trader	1	5,26%
Military	3	15,78%
Farmer	4	21,05%
Health workers	1	5,26%
Teachers	2	10,52%
Workers	9	47,36%
Students	1	5,26%
Driver	1	5,26%
<b>Total</b>	<b>19</b>	<b>100%</b>

The majority of UCR examinations came from the urology department of the CHU point "G" with 2.47% of cases followed by the surgery department (0.57% of cases), emergency department (0.38% of cases) and the nephrology department (0.17% of cases).

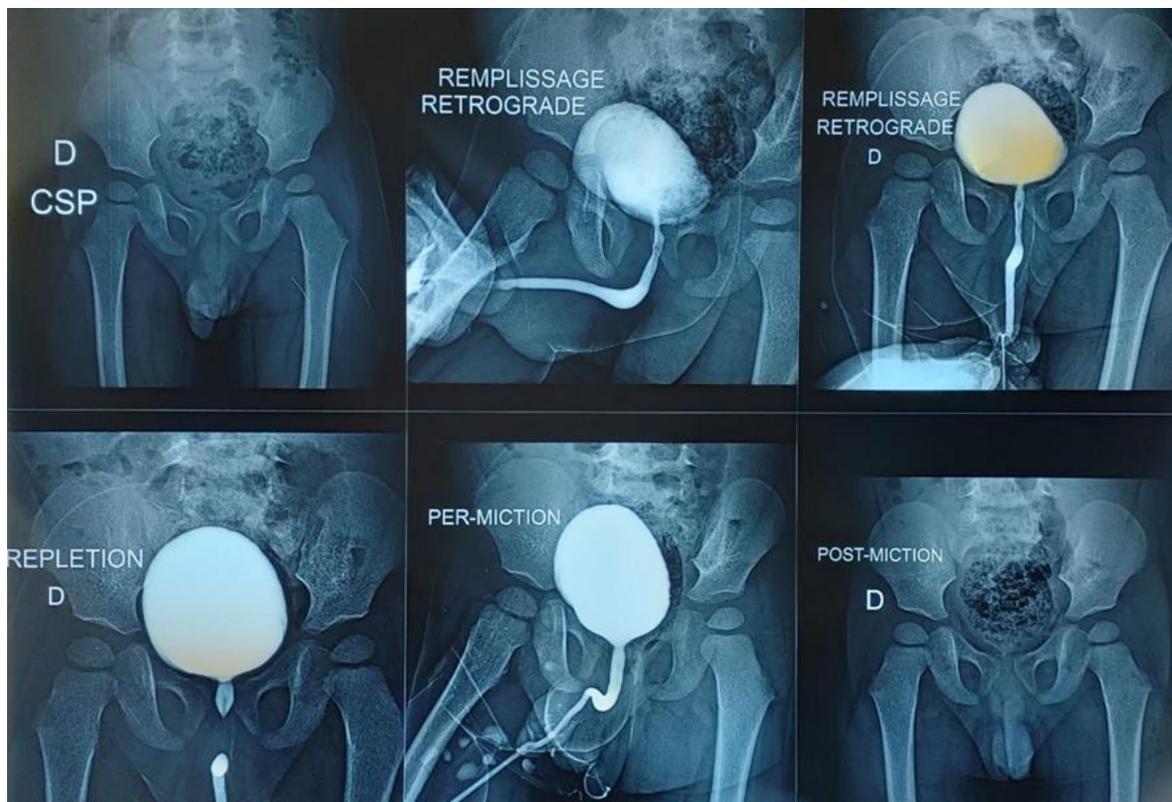
Internal medicine, gastroenterology and pulmonology had not sent patients there (0% of cases). Dysuria was frequently encountered among the examinations with 47.36% of cases followed by trauma in 21.05% of cases) (Table IV).

**Table IV: Distribution of UCR examinations according to clinical information**

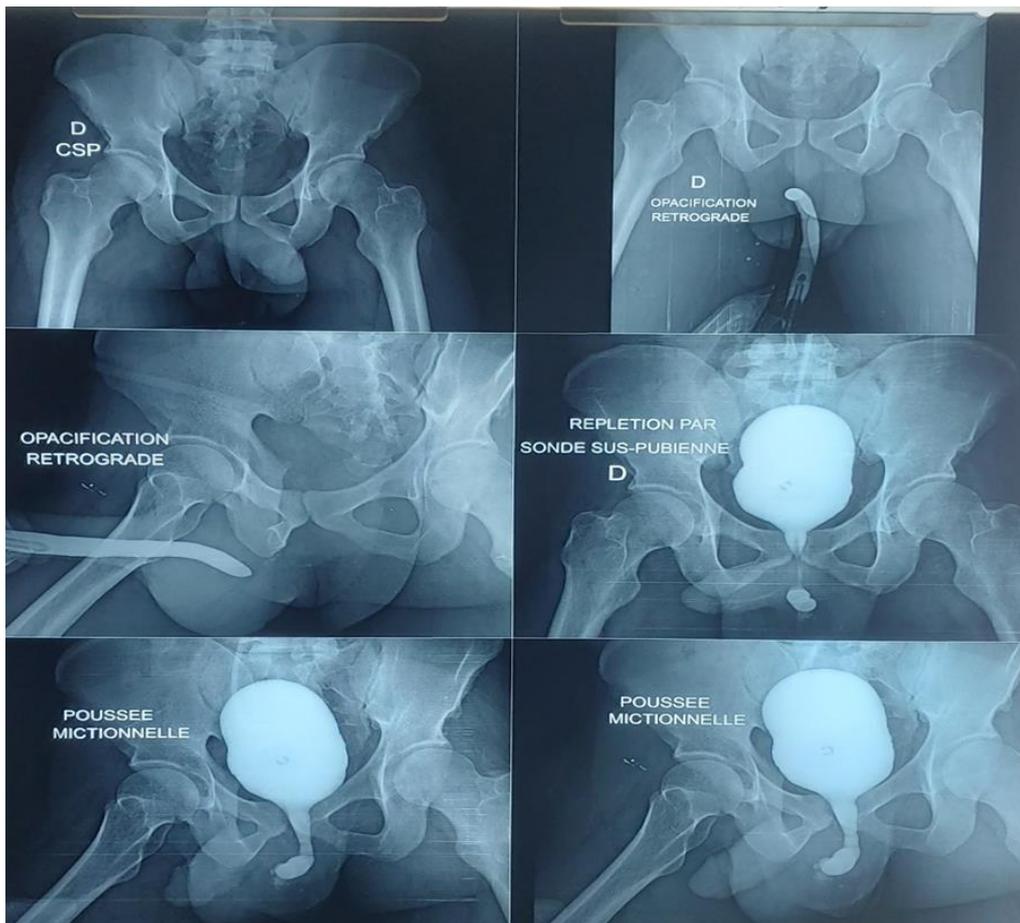
Clinical Intelligence	Workforce	Percentage
Trauma	4	21,05%
Dysuria	9	47,36%
Pollakiuria	3	15,78%
Urinary incontinence	2	10,52
Urethral stricture	1	5,26%
<b>Total</b>	<b>19</b>	<b>100%</b>

The realization of UCR made it possible to make diagnoses of urinary pathologies like stenosis of

the posterior urethra and normal examinations (Figures 2 and 3).



**Figure 2: Normal UCR picture of a young male subject**



**Figure 3: UCR image showing complete stenosis of the posterior urethra**

## DISCUSSION

The frequency of UCR was low per semester in relation to the other activities of the department 19 cases or 1.47% of cases, this result is comparable to Bagayoko's study [7] which involved 112 cases of UCR in 2022 for the period of one year. 100% of the UCR examinations performed were male. There was no female sex. Comparable to the literature and to the same study described above [7] in which the male sex was more represented with 99% of the cases. These results prove to us that urethral pathologies are essentially male. This could be explained by the fact that the male urethra is longer and therefore more exposed to infections. The age group  $\geq 50$  years was the most frequently encountered with 36.84% of cases in our study, which was superimposable and often differs from that of the literature (30 to 60 years) [7, 8]. These results mean that the age group varies according to the studies and that the pathologies of the lower apparatus concern all layers. Workers were the most represented profession with 47.36% of cases, this result could be explained by the decline in standard of living of this layer. The majority of UCR examinations came from the urology department of the CHU du point "G" with 2.47% of cases and in the literature the vast majority came from semi-urban areas and were farmers 29% [7, 9, 10]. This predominance could be explained by the

fact that the majority of the population lives in semi-urban areas where there are more road accidents with trauma to the urethra and sexual depravity which exposes you to sexually transmitted diseases (MST). Dysuria was frequently encountered among the examinations with 47.36% of cases followed by trauma in 21.05% of cases. Dysuria accounted for 8% of cases and 30% of cases in the literature [5, 7, 11]. This would be explained by the frequency of prostate pathology. The realization of UCR made it possible to make diagnoses of urinary pathologies like stenosis of the posterior urethra and normal examinations. What is affirmed largely in the literature [4, 5, 7, 11, 12].

## CONCLUSION

Retrograde urethrography is one of the reference radiological examinations in the diagnosis of abnormalities of the urethra and bladder. This study allowed us to evaluate the different techniques of retrograde cystourethrography at the G-spot CHU. The frequency of UCR examinations amounted to 1.47% of imaging department examinations. The age group  $\geq 50$  years old was the most representative of UCR examinations with 36.84% of cases and predominantly male. A good mastery of UCR techniques by all imaging technicians would be necessary for better diagnostic and therapeutic management of patients.

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