SAS Journal of Medicine
Abbreviated Key Title: SAS J Med
ISSN 2454-5112
Journal homepage: https://saspublishers.com

OPEN ACCESS

Urology

Impact of the COVID 19 Pandemic on the Activities of the Urology Department of Arrazi Hospital, Mohammed VI University Hospital, Marrakech

Dr. M Sylla[1*], Dr. M Cheqboub[1], Dr. M Tebaa[1], Pr. M S Moudouni[1], Pr. M A Lakmichi[1], Pr. Z Dahami[1], Pr. I Sarf[1]

[1]Urology Department, Mohammed VI University Hospital, Marrakech, Faculty of Medicine and Pharmacy, Cadi Ayyad University, Marrakech, Morocco

DOI: 10.36347/sasjm.2022.v08i10.011 | **Received:** 02.09.2022 | **Accepted:** 11.10.2022 | **Published:** 17.10.2022

***Corresponding author:** Dr. M Sylla
Urology Department, Mohammed VI University Hospital, Marrakech, Faculty of Medicine and Pharmacy, Cadi Ayyad University, Marrakech, Morocco

Abstract **Original Research Article**

Introduction: The impacts of the COVID-19 pandemic in the urology centers in Morocco are unknown with a lack of data on the evaluation of the level of urological activities per-COVID19, hence, the reasons that motivated us to conduct this study. The main objective of our work is to evaluate the repercussion of the COVID 19 pandemic on the medicosurgical activities of the Urology service of the CHU MOHAMED VI of Marrakech. ***Patients and Methods:*** This is a retrospective and descriptive study comparing activities one year before COVID-19 and one year amidst COVID-19. Ranging from March 23, 2019 to March 23, 2020 for the pre COVID-19 period and from March 23, 2020 to March 23, 2021 for the year during COVID-19 period. All patients seen during the study period with a diagnosis of urological pathology whether in the emergency department or admitted directly to the department through the consultation. Data collection was done with data sheets filled in from the consultation, hospitalization and operating room registers. We also used the digital information system Hosix of our hospital. Each patient file included in the study was the subject of an exploitation form established on the basis of the objectives of the study. The analysis and writing of the data were done with the software: Word, Excel and SPSS. ***Results and Discussion:*** A total of 771 adult urological procedures were performed during the pre-COVID period and 531 during the per-COVID period, representing an overall reduction in activity of 18.44%. The decrease in activity for scheduled procedures was 34% (543 versus 267) for the year during COVID-19 period. The decrease in emergency activity was 21% (221 Pre-COVID versus 148 during COVID period). IRO was the most common diagnosis during the two study periods, followed by spermatic torsion for patients seen in the emergency department, with respective percentages of 65.9% and 47.8% for the pre-COVID period and 52.2% and 44.1% amidst COVID period. The decreases in surgical activity concerned during the period amidst COVID are the following: renal tumor surgery, non-invasive bladder tumors, prostatic malignant tumors, prostatic benign tumors, testicular tumors and stone surgery: -29%, -11%, -100%, -38%, -67%, -26% respectively. Surgery of infiltrating bladder tumors (Cystoprostatectomy and anterior pelvectomy) with a percentage of +27%, +34%. ***Conclusion:*** The urological surgical activities of the MOHAMMED VI University Hospital were strongly affected by the COVID-19 pandemic. This study allows us to have an objective idea on the impact of covid on our daily activities of the department; these results have been taken into account and contribute to improve the service of our department. It will serve as an action plan and a solid trajectory to face future epidemic or pandemic threats .In addition to, the adaptation and reorganization of surgical services.

Keywords: Pandemic, COVID 19, Urology, consultation.

1. INTRODUCTION

The new coronavirus disease 2019 (COVID-19) can cause severe acute respiratory syndrome (SARS) [1]. It is an infection affecting humans, which started in China, in the Wuhanregion of Hubei province. The infection has been declared an international health emergency [2]. Its curative treatment is unknown and is the source of many clinical trials and major impacts [3].

Some urology centers have been forced to modify their operative programs, prioritizing activities,

postponing scheduled elective procedures, and shifting their focus to the management of COVID-19 cases [4].

The Kingdom of Morocco declared a state of health emergency on March 23, 2020, which disrupted the routine health activities of the CHU MOHAMED VI by the introduction of measures of confinement, restriction of movement and the momentary conversion of theCHU MOHAMED VI in a hospital to take care of patients COVID for three months.

The impacts of this COVID-19 pandemic in the urology centers in Morocco are unknown with insufficient data on the evaluation of the level of urological activities amidst COVID-19, thus, the reasons that motivated us to conduct this study.

The general objective of our study is to evaluate the impact of the COVID 19 pandemic on the medical and surgical activities of the Urology Department of the MOHAMED VI University Hospital in Marrakech, in a specific way:

- ✓ Assess the number of non-emergency patients whose previously scheduled surgery was cancelled due to health emergencies (lockdown, travel restrictions, conversion of Arrazi Hospital to Covid 19).
- ✓ Evaluate the activity capacity of the Urology Department one year before (Pre COVID 19 period) and one year after (per COVID 19 period).

2. METHODOLOGY

This is a retrospective, descriptive study comparing activities one year before COVID 19 and one year of per COVID 19.

The data collection covered two periods March 23, 2019 to March 23, 2020 Pre-COVID 19 period and from 23 March 2020 to 23 March 2021 Period per COVID 19 All patients seen during the study period with a diagnosis of urological pathology, whetherin the emergency department or admitted directly to the department through the consultation.

Data collection was done with data sheets filled in from the consultation, hospitalization and operating room registers. We also used the Hosix digital information system of our hospital. Each patient file included in the study was the subject of an exploitation form established on the basis of the objectives of the study.

The analysis and writing of the data was done with the following software: Word, Excel and SPSS.

3. RESULTS

3.1. General Characteristics of the Population

3.1.1 Age

The age of the patients at the time of surgery ranged from 15 to 90 years with an averageof 52 years (Fig.1).

The age group between 41 and 64 was the most dominant, with a rate of 45.85% of cases. With respectively 43.7% during the COVID period and 47.3% during the pre-COVID period.

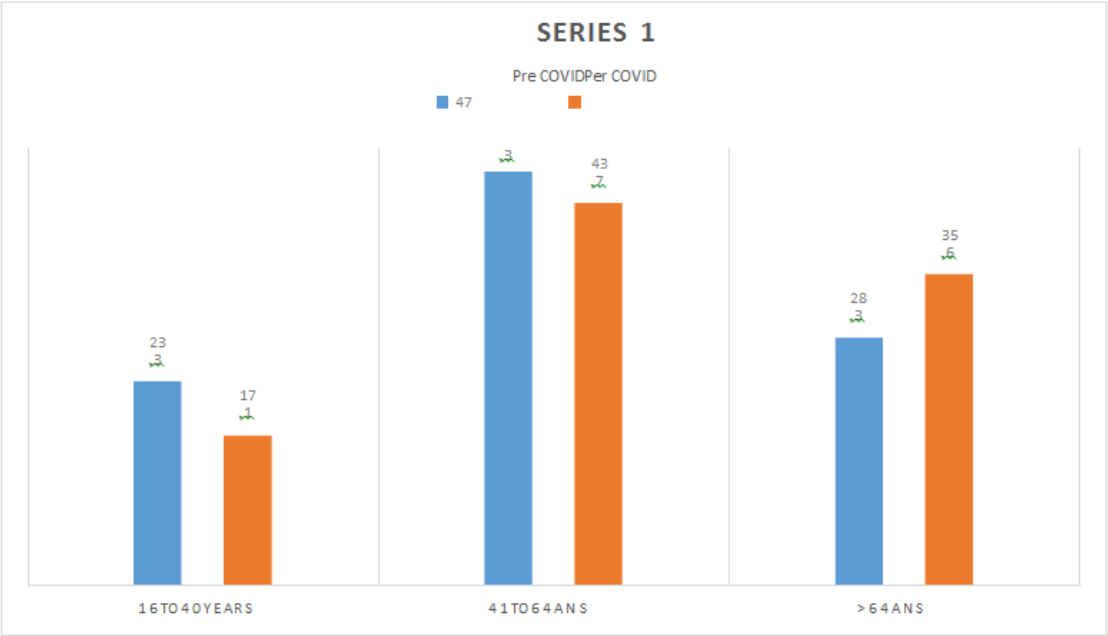

Figure 1: Distribution of patients according to age groups

3.1.2Gender

The number of male and female patients was 606 (78%) and 286 (22%) respectively, with a sex ratio of 1.5 in favor of males (Fig. 2).

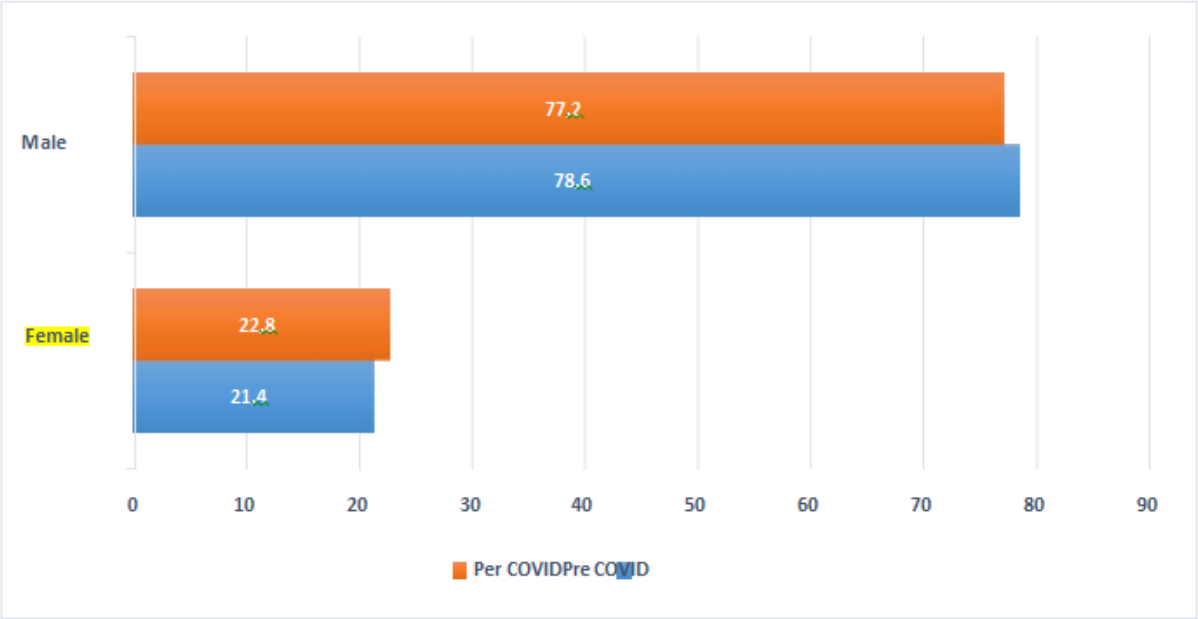

Figure 2: Distribution of patients according to gender.

A total of 771 adult urological procedures were performed in the pre-COVID period and531 in the per-COVID period, for an overall reduction in activity of 18.44% (Fig 3)

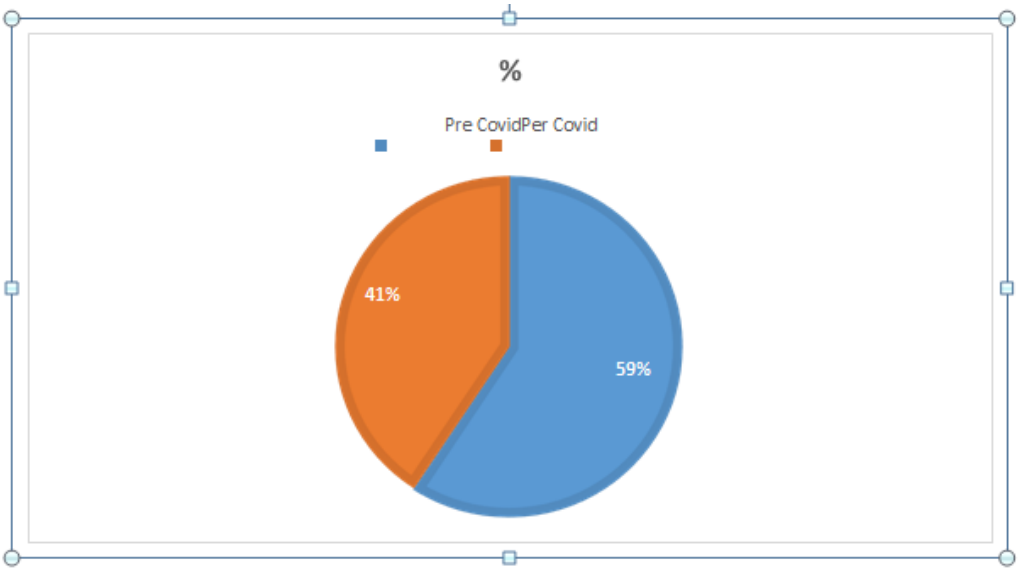

Figure 3: Impact of the COVID-19 pandemic on adult urologic surgery.

3.1.3 Variation in Operating Activity

The decrease in activity for scheduled procedures was 34% (543 versus 267) for the Pre-COVID period. The decrease in emergency activity was 21% (221 Pre COVID versus 148 COVID). Ambulatory surgery activity was reduced by 42% in the March 2020 period comparedto March 2019.

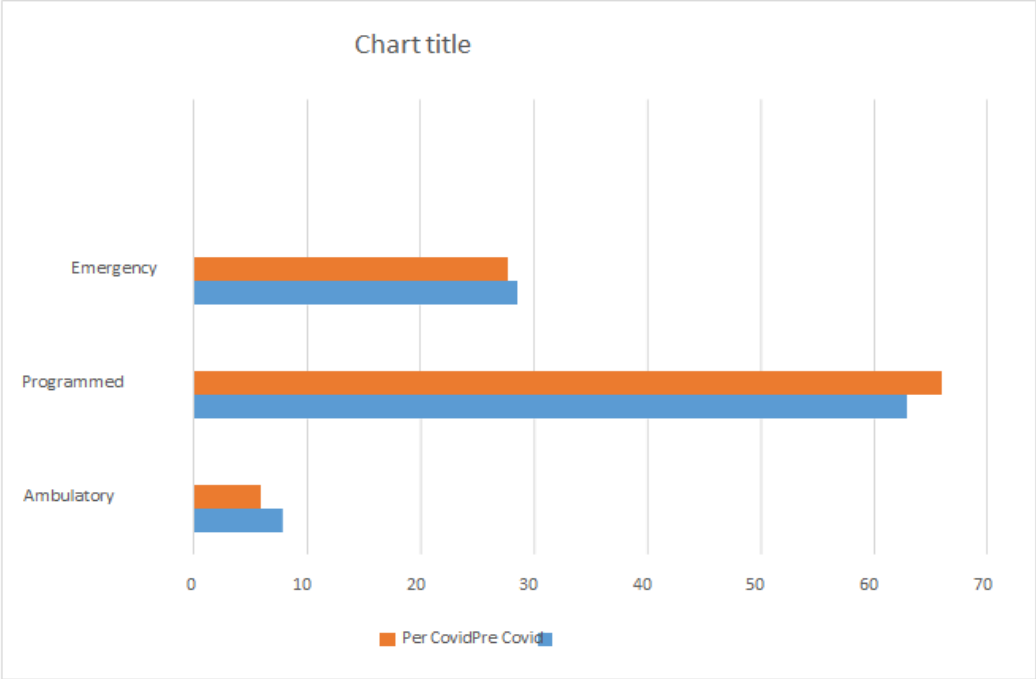

Figure 3: Impact of the COVID-19 pandemic on adult urologic surgery.

3.1.4 Reasons for Consultation in Urological Emergencies

Concerning the most frequent urological emergencies, we note an increase in the number of cases of hematuria during the COVID period (62.6%) compared to the pre-COVID period (37.4%), i.e. a difference of 25.2%.

No significant difference in the number of referrals for lumbar and scrotal pain.

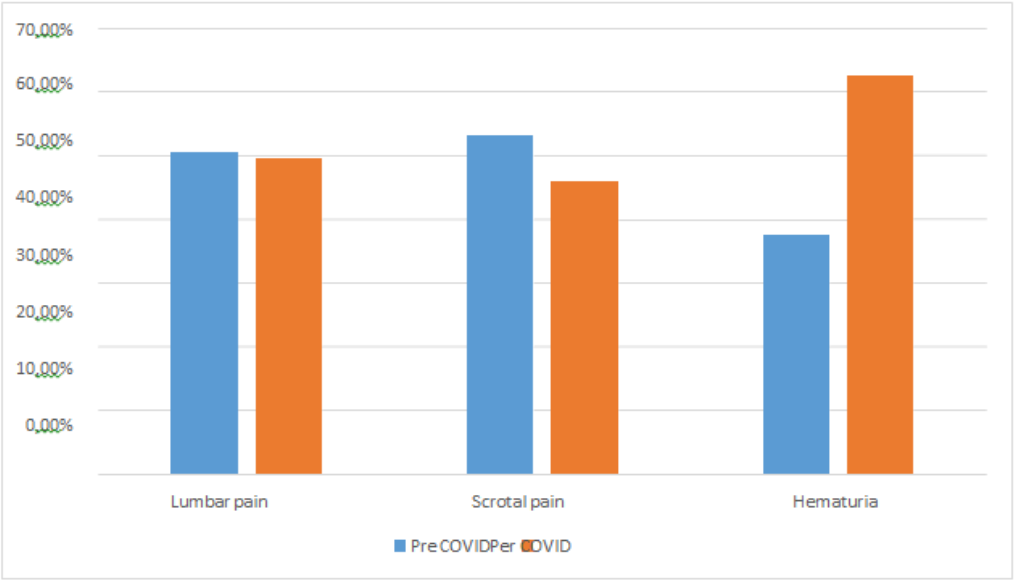

Figure 4: Impact of the COVID-19 pandemic on emergency room visits urological

3.1.5 Urological Emergency Consultation Diagnoses

IRO was the most common diagnosis during both study periods followed by spermatic torsion for patients seen in the emergency room with respective percentages.

65.9%, 47.8% for the pre-COVID period and 52.2%, 44.1% amidst COVID period (Table1).

Table 1: Impact of the COVID-19 pandemic on urological emergencies

		Period		Total
		Pre COVID	**Per COVID**	
IRO	Workforce	75	50	125
	%	65.9 %	44.1%	100 %
Torsion of the spermatic cord	Work force	22	24	46
	%	47.8 %	52.2 %	100 %
Psoas abscess	Workforce	20	9	29
	%	68.9 %	31 %	100 %
Gangrene of fournier	Workforce	19	11	30
	%	63 %	37	100

3.1.6 Diagnosis of Entry to the Service of Patients Scheduled for Surgery Recruited Via theConsultation

Diagnoses of tumor pathology and urinary calculi were the most common during the pre-COVID and in-COVID periods, with percentages of 26.2% and 23.7%, respectively (Table2).

Table 2: Impact of the COVID-19 pandemic on the diagnosis of entry to service for scheduled patients

			Period		Total
			Pre Covid	**Per Covid**	
	Tumor	Workforce	169	172	341
		%	21.9%	32.4%	26.2%
Diagnosis of consultation if Patient programmed	Calculatios urinary	Workforce	173	173	309
		%	22,4%	25.6%	23,7%
	Pathology andrological	Workforce	191	94	285
		%	24,8%	17.7%	21,9%
	Pathology infectious	Workforce	25	5	30
		%	3,2%	9%	2,3%
	Uropathy malformate	Workforce	28	13	41
		%	3,6%	2.4%	3,1%
Total		Workforce	771	531	1302
		%	**100,0%**	**100,0%**	**100%**

3.1.7 Impact of the COVID-19 Pandemic by Response Category

The most significant decreases in activity were in renal tumor surgery, non-invasive bladder tumors, prostatic malignant tumors, prostatic benign tumors, testicular tumors and stone surgery, respectively -29%, -11%,-100%, -38%, - 67%, –26% (Table3).

Regarding the surgical activity of infiltrating bladder tumors and malignant prostate tumors we observed an increase in the number of operated patients with a percentage of +27%, +34%.

Table 3: Impact of Pandemic COVID-19 by Response Category

	Workforce in 2019	**Workforce in 2020**	**Variation**
Kidney tumor surgery (total nephrectomy and partialnephrectomy)	28	20	- 29 %
Surgery for infiltrating bladder tumors (IABT) (cystoprostatectomy and anterior pelvectomy)	14	19	+27 %
Non-infiltrating bladder tumor (NIBT) surgery(RTUTV)	101	90	-11 %
Surgery for localized malignant tumors of theprostate (radical prostatectomy)	5	0	-100 %
Surgery of metastatic malignant tumors of theprostate (Drilling; pulpectomy)	10	15	+34 %
Benign hypertrophy surgery (Adenomectomy; TURP)	54	34	-38 %
Testicular tumor surgery (orchiectomy)	3	1	-67 %
Calculus surgery (JJ rise; URS; NLPC; lumbotomy)	174	130	-26 %

3.1.8 Length of Hospitalization

The length of hospital stay was reduced during the COVID period 54.0% had a length of hospital stay of less than 3 days during the COVID period compared to 37.9% during the pre COVID period (Fig 3).

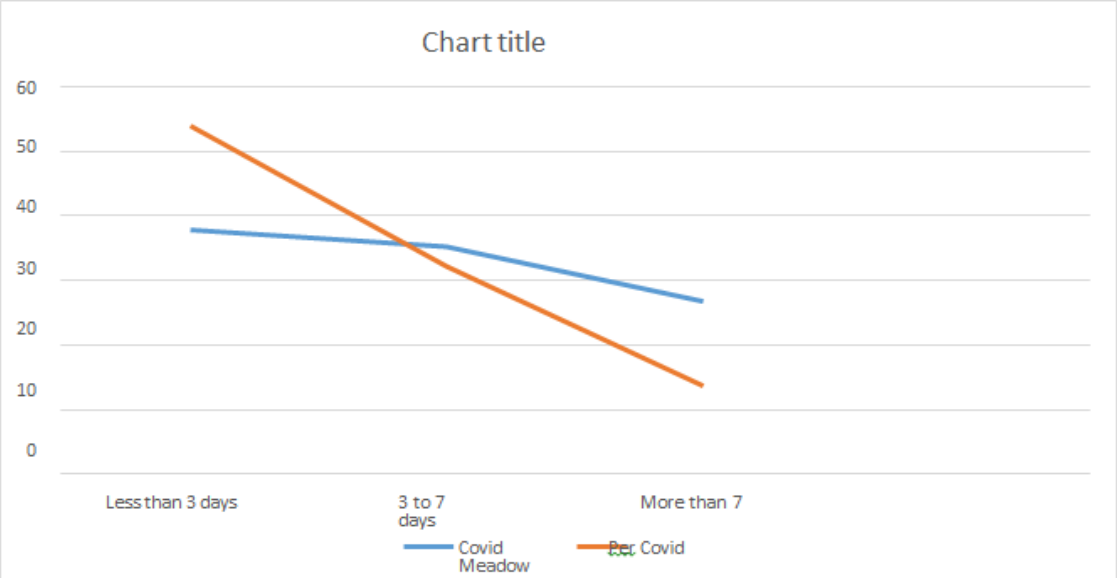

Figure 4: Impact of the COVID-19 pandemic on length of stay

4. DISCUSSION

This study allowed us to have an objective and quantitative evaluation of the number of non-urgent interventions postponed in the urology department of the CHU MOHAMMED VI of Marrakech during the period of conversion of the CHU MOHAMMED VI into a COVID patient intake hospital. The number of postponed interventions was 240.

The COVID-19 pandemic has imposed in Morocco a complete remodeling of the urological surgical activity at CHU MOHAMMED VI. The decision to postpone all non- emergency surgeries has led to a drastic reduction of the operative volume and the offer of care in urology.

Stricter health measures were also adopted, such as suspending all elective elective surgeries [5, 6] and limiting inpatient and outpatient services to critically ill patients, while increasing intensive care capacity [6-8]. In addition, some governments have increased their financial support to health systems [9] and increased their supply of personal protective equipment [10].

Concerning the number of procedures, 771 adult urological procedures were performed during the pre-COVID period and 531 during COVID period, i.e., an overall reduction in activity of 18.44% (Table 1). The decrease in the frequency of surgical procedures observed during the COVID period is consistent with Pinar *et al.*, [4].

The decrease in activity for scheduled procedures was 34% (543 versus 267) for the pre-COVID period. The decrease in emergency activity was 21% (221 Pre-COVID versus 148 COVID), and this decrease was noted for urgent activities by Pinar *et al.*, (-44%) [4].

These decreases in surgical activities in our context were due to the measures of restriction of movement, and the reduction of the quota of consultation leading to adecrease in the mechanism of recruitment of the patients, the priority interventions carried out concerned the malignant and urgent pathologies.

Based on the Chinese experience, it is recommended to delay all elective cancer surgeries in patients with stable cancer, increase the measures of protection for cancer patients or cancer survivors, and comprehensive monitoring and/or treatment is advised in cancer patients with COVID-19 [11].

Concerning the reasons for consultation in urological emergencies, hematuria was the first cause of consultation during both periods of our study. Comparatively, we note an increase in the number of cases of hematuria during the COVID 62.6% versus the pre-COVID period 37.4%, i.e. a difference of 25.2%. This difference is explained by the symptomatic alert and the generalized psychosis induced by COVID 19 motivating the patients to present to the emergency room as soon as the symptomatology was noticed, as only emergency consultations were prioritized.

Most benign urological surgeries should be postponed until after the pandemic, including incontinence surgeries, BPH surgeries, reconstructive surgeries (urethral strictures), infertility erectile

dysfunction surgeries and genitourinary prolapse [12-14].

Diagnoses of tumor pathology were high during the per-COVID period at 32.4% compared to the pre-COVID period at 21.9%, reflecting the progression of disease during theperiod of restricted travel.

During our study, we noted a high number of total cystectomies during the per-COVID period [16] compared to [14] for the pre-COVID period, i.e. an increase of +27%.

Concerning surgery for localized malignant prostate tumors, there were 5 radical prostatectomies during the pre- Covid period and 0 during the per-Covid period. In correlation with this constant, there was a 34% increase in surgeries related to metastatic prostate cancer (pulpectomy and prostatic drilling).

These differences are due to the progression of the tumor processes following the restrictions of movement and the temporary stop of the scheduled consultations during the confinement decrease the detection of certain tumors at the localized stage.

The length of hospitalization was reduced during the COVID period: 54.0% of patients had a length of hospitalization of less than 3 days during the COVID period, compared to 37.9% during the pre-COVID period for the same types of interventions. This reduction inthe length of stay was recommended to avoid an increase in nosocomial infections.

Personalized local care at home was the alternative for the follow-up of these patients whose hospitalization time was reduced.

Unfortunately, there are few data on urologic oncology practice during the COVID-19 pandemic. It is recommended that a multidisciplinary team including urologists, oncologists, pulmonologists, infectious diseases specialists, anesthesiologists, and a member of infection control be integrated into the management of patients with urologic cancers with confirmed or suspected COVID-19 [15, 16].

However, surgical intervention should be considered for urologic emergencies, such as high-grade malignancies and unstable trauma patients. All health care workers, including urologists, should adopt sufficient protective strategies to guard against infection when dealing with patients with COVID-19 [12]. The current recommendations are based on the limited data available in the literature and are subject to change.

CONCLUSION

The urological surgical activities of the CHU MOHAMMED VI were strongly affected by the pandemic linked to COVID-19.

A rapid readjustment of our operating capacities was instructed to compensate for the postponement of surgical procedures due to the COVID. A general reorganization of the department was done to maintain normal operations during a health crisis.

This study allowed us to have an objective idea on the impact of covid on our daily activities of the department; these results were taken into account and contribute to improvethe service of our department.

BIBLIOGRAPHY

1. World Health Organization. Severe acute respiratory infection treatment center: a practical manual for the establishment and management of an SRI treatment center and SRI screening unit in health care facilities. World Health Organization; 2020. Report No.: WHO/2019- nCoV/SARI_ treatment_center/2020.1. Available at: https://apps.who.int/iris/handle/10665/331756
2. He, F., Deng, Y., & Li, W. (2020). Coronavirus disease 2019: What we know?. *Journal of medical virology*, *92*(7), 719-725.
3. European Urology. COVID-19 Resource. Available at: https://www.europeanurology.com/covid-19-resource. Accessed March 2020.
4. Pinar, U., Anract, J., Duquesne, I., Dariane, C., Chartier-Kastler, E., Cussenot, O., ... & Rouprêt, M. (2020). Impact of the COVID-19 pandemic on surgical activity in the urology departments of the Assistance Publique–Hôpitaux de Paris. *Advances in Urology* , *30* (8-9), 439-447. https://doi.org/10.1016/j.purol.2020.05.001.
5. Iacobucci, G. (2020). Covid-19: all non-urgent elective surgery is suspended for at least three months in England. *BMJ: British Medical Journal (Online)*, *368*.
6. Naspro, R., & Da Pozzo, L. F. (2020). Urology in the time of corona. *Nature Reviews Urology*, *17*(5), 251-253.
7. Covid-19 and urology [Internet]. BJUI. 2020 [cited May 15, 2022]. Available from: https://www.bjuinternational. com/bjui-blog/covid-19-and-urology/
8. Chan, M. C., Yeo, S. E., Chong, Y. L., & Lee, Y. M. (2020). Stepping forward: urologists' efforts during the COVID-19 outbreak in Singapore. *European Urology*, *78*(1), e38-9.
9. Legido-Quigley, H., Mateos-García, J. T., Campos, V. R., Gea-Sánchez, M., Muntaner, C., & McKee, M. (2020). The resilience of the Spanish health system against the COVID-19 pandemic. *The lancet public health*, *5*(5), e251-e252.
10. Mahase, E. (2020). Coronavirus: global stocks of protective gear are depleted, with demand at "100 times" normal level, WHO warns. *BMJ*, *368*, m543.
11. Liang, W., Guan, W., Chen, R., Wang, W., Li, J.,

Xu, K., ... & He, J. (2020). Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *The lancet oncology*, *21*(3), 335-337.

12. Puliatti, S., Eissa, A., Eissa, R., Amato, M., Mazzone, E., Dell'Oglio, P., ... & Rocco, B. (2020). COVID-19 and urology: a comprehensive review of the literature. *BJU international*, *125*(6), E7-E14.
13. Urology practice during the COVID-19 pandemic - Minerva Urologica e Nefrologica 2020 June; 72(3), 369-75 [Internet]. [cited 15 May 2022]. Available from: https://www.minervamedica.it/en/journals/minerva-urology-nephrology/article.php?cod=R19Y2020N03A0369
14. Stensland, K. D., Morgan, T. M., Moinzadeh, A., Lee, C. T., Briganti, A., Catto, J. W., & Canes, D. (2020). Considerations in the triage of urologic surgeries during the COVID-19 pandemic. *European urology*, *77*(6), 663-6.
15. Luo, Y., & Zhong, M. (2020). Standardized diagnosis and treatment of colorectal cancer during the outbreak of novel coronavirus pneumonia in Renji hospital. *Zhonghua wei Chang wai ke za zhi= Chinese Journal of Gastrointestinal Surgery*, *23*(3), E003-E003.
16. Yu, G. Y., Lou, Z., & Zhang, W. (2020). Several suggestions of operation for colorectal cancer under the outbreak of corona virus disease 2019 in China. *Zhonghua wei chang wai ke za zhi= Chinese journal of gastrointestinal surgery*, *23*(3), 208-211.