

5th International Conference on
Urology and Renal Health

October 25, 2022 | Webinar

Scientific Tracks & Abstracts



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Title: Laparoscopic radial nephrectomy: Are there limits?

Ahmed Abouelkhair, Damanhour Oncology centre, Egypt

Title: An integrative ligand-based pharmacophore modeling, virtual screening, and molecular docking simulation approaches identified natural lead compounds against lung cancer by targeting acetylcholinesterase

MD Golap Hossain, King Abdulaziz University, Saudi Arabia

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Circadian rhythm-related miR-6883-5p suppresses Enzalutamide-resistant prostate cancer proliferation via inhibiting AR-V7 expression

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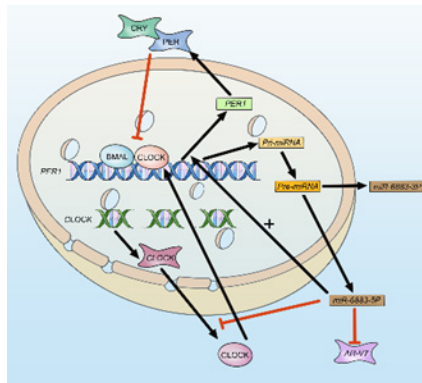
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Prostate cancer is the second most prevalent cancer in men and the sixth leading cause of cancer death worldwide. Age, family history, race, tobacco use, obesity, diet, and circadian disruption are all risk factors for prostate cancer. Epidemiological studies of circadian disruption focus primarily on night shift work. The 2017 Nobel Prize in Physiology or Medicine was awarded to Jeffrey C. Hall, Michael Rosbash, and Michael W. Young for making it possible to study the molecular mechanisms underlying circadian rhythms. The molecular mechanisms between circadian rhythm genes and diseases, including prostate cancer, have been gradually revealed, and these studies hold promise for future clinical application.

However, the relationship between the molecular mechanism of circadian rhythm and the development of prostate cancer has not been fully clarified. We observed that a microRNA plays an important role in the regulation of circadian rhythms and prostate cancer proliferation. Our study shows that miR-6883-5p is associated with circadian rhythm and can inhibit AR-V7, thereby suppressing the growth of enzalutamide-resistant prostate cancer. Our research provides a potential therapeutic target for enzalutamide-resistant prostate cancer and expands the understanding of circadian clock regulation regulatory mechanisms.



Recent Publications

1. Yue W, Du X, Wang X, et al. Prognostic values of the core components of the mammalian circadian clock in prostate cancer. PeerJ. 2021;9:e12539. Published 2021 Dec 9. doi:10.7717/peerj.12539
2. Sun J, Yue W, You J, et al. Identification of a Novel Ferroptosis-Related Gene Prognostic Signature in Bladder Cancer. Front Oncol. 2021;11:730716. Published 2021 Sep 7. doi:10.3389/fonc.2021.730716

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3. Sun J, Wei X, You J, et al. STC1 is a Novel Biomarker Associated with Immune Characteristics and Prognosis of Bladder Cancer. *Int J Gen Med.* 2021;14:5505-5516. Published 2021 Sep 11. doi:10.2147/IJGM.S329723
4. Yue W, et al. Circadian rhythm-related miR-6883-5p suppresses enzalutamide-resistant prostate cancer proliferation via inhibiting AR-V7 expression. (Contributing)
5. Yue W, et al. Important hub-RNAs in the development of prostate cancer identified by RIC-seq.

Biography

Yue Wenchang, from the First Affiliated Hospital of Soochow University in China, has completed urology resident standardization training in China and is now a Ph.D. candidate in urology, Soochow University. The primary focus of research is the association between prostate cancer and circadian rhythm. In addition, Yue has worked on the Internet for many years to popularize medical science, and his content has been read hundreds of millions of times.

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Concordance between biparametric MRI and Radical prostatectomy specimen in the detection of clinically significant prostate cancer and staging

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Introduction and Objectives: MRI has an increasing role in the diagnosis and staging of prostate cancer. Multiparametric MRI includes multiple sequences including T2 weighting, diffusion weighting and Dynamic Contrast Enhancement (DCE). Administration of DCE is expensive, time consuming and requires medical supervision due to the risk of anaphylaxis. Biparametric MRI (bpMRI), without DCE, overcomes many of these issues, however there is conflicting data on its accuracy. Furthermore, data on the concordance between bpMRI lesion and pathology specimen, as well as the rates of cancer stage upgrading after surgery is limited within the available literature. This study aims to examine the diagnostic test accuracy of bpMRI in the diagnosis of prostate cancer and radiological assessment of prostate cancer staging. Specifically, we aimed to evaluate the ability of bpMRI to accurately localise malignant lesions to better understand its accuracy and application in MRI-targeted biopsies.

Materials and Methods: One hundred and forty patients who underwent bpMRI prior to Radical Prostatectomy (RP) were retrospectively reviewed from a single institution. Histological grade from prostate biopsy was compared with surgical specimens from RP. Clinically significant Prostate Cancer (csPCa) was defined as Gleason grade group ≥ 2 . bpMRI staging was compared with RP histology.

Results: Overall sensitivity of bpMRI in diagnosing csPCa independent of location and staging was 98.87%. Of the 140 patients, 29 (20.71%) had their prostate biopsy histology upgraded at RP. 61 (43.57%) patients had csPca noted on RP specimen in areas that were not identified on the bpMRI. 55 (39.29%) had upstaging after RP from the original staging with bpMRI.

Conclusions: Whilst the overall sensitivity of bpMRI in predicting any clinically significant cancer was good, there was notably poor concordance in the location of the tumour between bpMRI and eventual RP specimen. The results suggest that caution should be exercised when using bpMRI for targeted prostate biopsies and validates the continued role of systemic biopsies. Furthermore, a significant number of patients were upstaged at RP from their original staging with bpMRI. Based on these findings, bpMRI results should be interpreted with caution and can underestimate the TNM stage, requiring careful consideration of treatment strategy.

bpMRI Results:

Item	Percentage
bpMRI sensitivity	98%
Upstaging after prostatectomy	39.29%

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Biography

Rammah Abdlbagi is a urology junior doctor at Northampton General Hospital (United Kingdom). He graduated from Sudan on 22/09/2016 from Alzaem Alzhari university's faculty of medicine. He completed his full Membership of the Royal College of Surgeon Edinburgh (MRCSEd) on 03/2018.

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Local availability influences choice of radical treatment for prostate cancer

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Introduction: Radical prostatectomy and radiotherapy are both viable options for the treatment of localised prostate cancer. Over the years, medicine has evolved towards a patient-centred approach. Patient decision-making is not motivated by clinical outcomes alone. Geographical location and ease of access to treating clinicians are contributory factors. With the development of robotic surgery, prostatectomy has been centralised into tertiary centres. This has impacted the distances that patients and their families are expected to travel.

Methods: A single centre retrospective study was undertaken, over a five-year period. All patients with localised prostate cancer, undergoing radical radiotherapy or prostatectomy were collected pre-centralisation. This was compared to the total number undergoing these treatments post-centralisation.

Results: Pre-centralisation, both radiotherapy and prostatectomy groups had to travel a median distance of fewer than five miles for treatment. Post-centralisation of pelvic surgery, prostatectomy patients had to travel a median distance of more than 40 miles; whilst the travel distance for the radiotherapy group was unchanged. In the post-centralisation cohort, there was a 63% decline in the number of patients undergoing radical prostatectomy, per month from a mean of 5.1 to 1.9 patients. The radical radiotherapy group had a concurrent 41% increase in patient numbers, with a mean increase from 13.3 to 18.8 patients per month.

Conclusion: The choice of radical treatment in localised prostate cancer is based on multiple factors. This study infers that local availability can influence the choice of radical treatment. It is imperative, that efforts are made to maintain accessibility to all viable options, for prostate cancer patients; to ensure that patient choice is not compromised.

Recent Publications

1. Aggarwal A, Han L, Tree A, Lewis D, Roques T, Sangar V, van der Meulen J. Impact of centralization of prostate cancer services on the choice of radical treatment. *BJU Int.* 2022 Jun 20.
2. Parry, M., Sujenthiran, A., Cowling, T., Nossiter, J., Cathcart, P., Clarke, N., Payne, H., Aggarwal, A. and Meulen, J., 2019. Impact of cancer service centralisation on the radical treatment of men with high-risk and locally advanced prostate cancer: A national cross-sectional analysis in England. *International Journal of Cancer*, 145(1), pp.40-48.
3. Pessoa, R., Maroni, P., Kukreja, J. and Kim, S., 2021. Comparative effectiveness of robotic and open radical prostatectomy. *Translational Andrology and Urology*, 10(5), pp.2158-2170.

Biography

Jemini Vyas is currently working at Northampton General Hospital as a clinical urology research fellow. She completed her MRCS and studied at Imperial College London and graduated in the year 2015.

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Predictive quantitative MDCT models for characterization of renal cell carcinoma subtypes and differentiation from renal oncocytoma: Three phase Nomogram approach analysis

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Objective: Our objective is to develop an approach using algorithmic predictive models to discriminate between common solid renal masses, including RCC subtypes and Renal Oncocytoma [RO], using multiphase Computed Tomography [CT].

Methods: We retrospectively analyzed a group of solid renal masses between January 2011 and December 2021 regarding the CT attenuation values using a CT scanner with 64 parallel detector rows and clinical parameters. Inclusion criteria included patients who had four phases of CT with a partial or radical nephrectomy. Exclusion criteria were patients with biphasic or one-phase CT, poor imaging quality, patients under surveillance, radiofrequency ablation, or indeterminate pathology findings as oncocytic tumor variant.

Results: Our results revealed a total number of 467 cases, including 195 masses of Clear RCC [CRCC], 81 masses of RO, 124 masses of Chromophobe RCC [ChRCC], and 67 masses proved to be papillary RCC [PRCC]. There is a significant difference between hypervascular [CRCC and RO] and hypovascular [ChRCC and PRCC] masses, and AUC= 0.95. The predictive model for differentiation between CRCC from RO showed AUC=0.79. At the same time, the discrimination of ChRCC from PRCC showed AUC= 0.94. Nomogram was developed for each phase of analysis.

Conclusion: Using the largest sample to our knowledge, we developed a three-phase nomogram analytical approach to initiate a practical method to discriminate between different solid renal masses that can be used in daily clinical practice.

Recent Publications

1. Shabel, Haytham & Farg, Hashim & Kolokythas, Orpheus & El-Diasty, Tarek. (2013). Cysts of the Lower Male Genitourinary Tract: Embryologic and Anatomic Considerations and Differential Diagnosis. *Radiographics : a review publication of the Radiological Society of North America, Inc.* 33. 1125-1143. 10.1148/rg.334125129.
2. Grant, Kinzya & Lindenberg, Liza & Shabel, Haytham & Pang, Yuxi & Agarwal, Harsh & Bernardo, Marcelino & Kurdziel, Karen & Turkbey, Baris & Choyke, Peter. (2013). Functional and molecular imaging of localized and recurrent prostate cancer. *European journal of nuclear medicine and molecular imaging.* 40. 10.1007/s00259-013-2419-6.
3. Shabel, Haytham & Elsayes, Khaled & Abou El Atta, Heba & Elguindy, Yehia & El-Diasty, Tarek. (2012). Genitourinary Schistosomiasis: Life Cycle and Radiologic-Pathologic Findings. *Radiographics : a review publication of the Radiological Society of North America, Inc.* 32. 1031-46. 10.1148/rg.324115162.

Biography

Haytham Shabel is a radiologist who is interested in body and oncology Imaging and he have special experiences in GU and prostate cancer Imaging and MP-MRI technique. Also, he was certified as International Clinical Researcher from Harvard Medical School in medical research and biostatistics.

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Restore renal function in chronic kidney disease by Hydro Pressure Therapy

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Chronic kidney disease is characterized by progressive loss of the renal microvasculature, which leads to local areas of hypoxia and induction of profibrotic responses, scarring and deterioration of renal function [1]. Revascularization alone might be sufficient to restore kidney function in a diseased kidney. For revascularization to be successful the underlying disease process needs to be halted or alleviated and there must remain a sufficient number of surviving nephron units that can serve as a scaffold for the kidney to regenerate [3].

The human body constantly regenerates after damage due to the self-renewing and differentiating properties of its resident stem cells. This natural process of healing replaces young cells having strong stress tolerance for tissue survival, which requires a functional vascular network at site [2]. Despite many recent advances in renal regenerative therapy, Chronic Kidney Disease (CKD) remains a major cause of morbidity and mortality. Whole organ regeneration may be a promising therapeutic approach. The role of a microenvironment in the pathogenesis of kidney disease has largely been undetermined. Microenvironment is a fundamental research topic in the fields of cell biology and regenerative medicine [4].

The possibility of using physical energies to boost regenerative processes has been strongly suggested and embedded in a wide variety of physical stimuli [5]. In renal fibrosis, a toxic microenvironment is unable to regenerate damaged renal tissue to restore kidney function. The use of physical energy in the form of hydrostatic pressure to eliminate renal fibrosis is a new therapeutic approach to restore renal function. A big advantage of hydrostatic pressure is its ability to increase circulation and assist venous return [6].

Pressure exerted by any liquid in a confined space is known as hydrostatic pressure, which acts equally in all directions, by the fluid molecules. When the body is immersed in fluid no movements are required. The urine collected in pelvis after artificial obstruction at pelviureteric junction will create intramural high hydrostatic pressure and helps to resolve renal fibrosis and to improve blood supply and recreates healthy cellular microenvironment which stimulates endogenous stem cells to regenerate hypoxic renal tissue structurally and functionally.

Recent Publications

1. Huang, X., Das, R., Patel, A., & Duc Nguyen, T. (2018). Physical Stimulations for Bone and Cartilage Regeneration. *Regenerative Engineering and Translational Medicine*, 4, 216-237.
2. Facchin F, Bianconi E, Canaider S, Basoli V, Biava PM, Ventura C. Tissue Regeneration without Stem Cell Transplantation: Self-Healing Potential from Ancestral Chemistry and Physical Energies. *Stem Cells Int*. 2018 Jul 3;2018:7412035.
3. Singh, M., Berkland, C., & Detamore, M. S. (2008). Strategies and applications for incorporating physical and chemical signal gradients in tissue engineering. *Tissue engineering. Part B, Reviews*, 14(4), 341–366.

Biography

Shrikant L Kulkarni completed his M.S. (General Surgery) in 1975 from B. J. Medical College Pune, Maharashtra India and his M.B.B.S. was completed at Miraj Medical College. Since 1971 he has worked at several government hospitals like the Wanless Hospital Miraj, Sangli General Hospital Sangli, Sassoon Hospital Pune, and multispecialty hospitals like Ruby Hall Clinic, Pune, and Jahangir Nursing Home, Pune. For the last 35-plus years, he is working at his own hospital at Chinchwad, Pune Maharashtra India.

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Ureteral stents with extraction strings: patient reported outcomes

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Introduction: Short-term ureteric stents are commonly placed after ureteroscopy procedures. The removal usually entails having a flexible cystoscopy, which entails a further invasive procedure. There are often delays in removing the stent as departments have limited cystoscopy availability. However, if stents with extraction strings are used, the patient or a clinician can remove it. The aim of the study is to assess the safety and effectiveness of the use of a stent with a string.

Method: A retrospective, single institution study was conducted over a three-month period. 20 consecutive patients had ureteric stent with string insertion. Ten of the patients had a stent removal procedure previously with flexible cystoscopy. A validated questionnaire was used to assess outcomes. Primary outcomes included: dysuria, hematuria, urinary frequency and disturbance of the patient's daily activities. Secondary outcomes included pain experience during the stent removal.

Result: Fifteen patients (75%) experienced hematuria and frequency. Two patients experienced pain and discomfort during the stent removal (10%). Two patients had experienced disturbance in the daily activity (10%). All patients who had stent removal before using flexible cystoscopy preferred the removal of the stent using a string. None of the patients had stent displacement. Median stent dwell time was five days.

Conclusion: Patient reported outcomes measures for the indwelling period of a stent with extraction string are equivalent to the published data on stents. Extraction strings mean that the stent dwell time can be reduced. The removal of stent on extraction strings is more tolerable than the conventional stent.

Item	Percentage
Stent symptoms	75%
Patients prefer stent on string removal	100%
Patient experience disturbance in daily activities	10%

Biography

Rammah Abdlbagi is a urology junior doctor at Northampton General Hospital (United Kingdom). He graduated from Sudan on 22/09/2016 from Alzaem Alzhari university faculty of medicine. He completed full Membership of Royal College of surgeon Edinburgh (MRCSed) on 03/2018.

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The impact of centralisation on radical prostatectomy outcomes: Our outcomes

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Introduction: The development of robotic surgery has accelerated centralization to tertiary centers, where robotic Radical Prostatectomy (RP) is offered. The purpose of concentrating treatment in high volume, specialist centers is to improve quality of care and patient outcomes. The aim of this study was to assess the impact on clinical outcomes of centralization for locally diagnosed patients undergoing RP.

Methods: Clinical outcomes for 169 consecutive laparoscopic & open RP pre-centralizations were retrospectively compared with 50 consecutive robotic RP conducted over a similar period post-centralization. Preoperative risk stratification and time to surgery were collected. Perioperative outcomes including Length of Stay (LOS) and complications were collated. Post-operative outcomes including Erectile Dysfunction (ED), Biochemical Recurrence (BCR) and urinary continence were assessed.

Results: Preoperative risk stratification showed no difference between the two groups. Median time from diagnosis to treatment was similar between the two groups (pre-centralization, 121 days, post-centralization, 117 days). Mean length of stay (pre-centralisation, 2.1 days, post-centralisation, 1.6 days) showed no significant difference ($p=0.073$). Proportion of overall complications (pre-centralisation, 11.4%, post-centralisation, 8.7%) and complications, above Clavien-Dindo 2, were similar between the two groups (pre-centralisation 1.2%, post-centralisation 2.2%). Post operative functional parameters including continence and ED were comparable. Five-year BCR free rate was 78% for the pre-centralisation group and 79% for the post centralization group.

Conclusion: For our cohort of patients, clinical outcomes have remained static during centralization. It is imperative that centralization is accompanied by increased capacity, streamlining of pathways and training, to ensure that improved quality of care is achieved. Our institution has newly acquired a robot and prospectively studying this data may support the reversal of centralization for RP surgery.

Recent Publications

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2. Finkelstein, J., Eckersberger, E., Sadri, H., Taneja, S., Lepor, H. and Djavan, B., 2022. Open Versus Laparoscopic Versus Robot-Assisted Laparoscopic Prostatectomy: The European and US Experience. *Reviews in Urology*, 12(1), pp.35-43.
3. Hamdy, F., Donovan, J., Lane, J., Mason, M., Metcalfe, C., Holding, P., Davis, M., Peters, T., Turner, E., Martin, R., Oxley, J., Robinson, M., Staffurth, J., Walsh, E., Bollina, P., Catto, J., Doble, A., Doherty, A., Gillatt, D., Kockelbergh, R., Kynaston, H., Paul, A., Powell, P., Prescott, S., Rosario, D., Rowe, E. and Neal, D., 2016. 10-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Localized Prostate Cancer. *New England Journal of Medicine*, 375(15), pp.1415-1424.

Biography

Jemini Vyas is currently working at Northampton General Hospital as a clinical urology research fellow. She completed her MRCS and studied at Imperial College London and graduated in the year 2015.

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Laparoscopic radical nephrectomy for large renal mass with level I renal vein thrombus

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Introduction and Objectives: Venous involvement develops in 5% to 10% of patients with renal cell carcinoma and is generally considered a relative contraindication to laparoscopic radical nephrectomy. Recent reports have suggested that laparoscopy is feasible option of treatment. However, the procedure may be technically difficult in patients with large renal tumors and in the presence of renal vein thrombus. In this video we present the step by step technique of Laparoscopic radical nephrectomy of a large renal tumour with renal vein thrombus.

Methods: We present a 62 years old male who presented with accidentally discovered right renal mass with renal invasion. Her body mass index was 39 kg/m². Triphasic Computed tomography of the abdomen with renal angiogram revealed an enhanced right renal lower polar mass that measured 10 x 9 X 7 cm compressing the lower and middle calyces with renal vein invasion and patent IVC. Invading renal vein showing dilated lumen distended with enhancing tumoral tissue. The RENAL nephrometry score was 10. The patient had no associated co-morbidities. Laparoscopic radical nephrectomy was done using the four conventional ports 1st one was 10 mm inserted at para rectal line opposite to umbilicus for 30 degree laparoscopy, 5 mm port at mid clavicular line 4 finger breadth below the 1st port, 12 mm port at mid clavicular line 4 finer breadth above the 1st port and the 4th one was inserted at midline just below xiphisternum for usage of needle holder as liver retractor. Dissection started by incision of the posterior peritoneum that was followed medial reflection of the right ascending colon and the duodenum. Then the lower pole of the kidney was mobilized. Dissection of IVC was started at level of lower pole and continued upwards along the medial aspect of the kidney by combining both sharp and blunt dissection. The main renal vein was located upwards behind the liver. Two renal arteries were found being located posterior and below the renal vein, they were dissected then clipped by the Hem-O-Lock and divided by LigaSure™. Then the main renal vein was dissected to be free of surrounding, vascular tape was used for milking of renal thrombus toward the kidney and away from IVC gate, until there was a good stump for usage of Endo GIA vascular stapler (Echelon Flex 35 ETHICON) for division of renal vein including the thrombus. Then the ureter was divided by LigaSure™. En-block dissection of the kidney with the tumor was done using both sharp and blunt dissection. The specimen was entrapped in custom-made bag and the site of insertion of the 5-mm port was extended through which the specimen was extracted.

Results: The operative time was 83 minutes. Blood loss was 100 c.c. There were no intraoperative or postoperative complications. The skin incision after retrieval of the specimen was 6 cm. Hospital stay was 2 days. Visual analogue pain scale at discharge was 2. Histopathology confirmed the diagnosis of clear cell renal cell carcinoma PT2bG3, occluded renal vein by tumor thrombus with free safety margins. The specimen size measured 17x12x7 cm while tumor size measured 11x10.5x5 cm

Conclusions: Laparoscopic radical nephrectomy is feasible and safe option for treatment of large renal tumors with renal vein thrombus. Although technically difficult, the procedure has low morbidity and high patient satisfaction.

Recent Publications

1. Abouelkhair, Ahmed & Abdel-Karim, Aly & Eid, Ahmed & Mahfouz, Wally. (2020). PD11-06 EVALUATION OF LAPAROENDOSCOPIC SINGLE SITE SURGERY VERSUS MINILAPAROSCOPY IN RADICAL NEPHRECTOMY: PROSPECTIVE RANDOMIZED COMPARATIVE STUDY. The Journal of Urology. 203. e255-e256. 10.1097/JU.0000000000000845.06.

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2. Abouelkhair, Ahmed & Hussein, Alaa. (2019). Molecular Characterization of Different Salmonella Enterica Serotypes Isolated From Frozen Meat in Minoufiya Governorate. Journal of Current Veterinary Research. 1. 63-68. 10.21608/jcvr.2019.57045.

Biography

Ahmed Abouelkhair is a Vice chairman of the Uro-oncology unit, at Damanhur Oncology Centre, Egypt. He graduated Master's Degree in Urology from, Alexandria University, Egypt. He completed the Laparoscopic and Robotic surgery fellowship PLAGH301, Beijing, China.

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Video Presentation



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Urinary bladder pheochromocytoma managed by TURBT

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Introduction: Urinary bladder Pheochromocytomas (bladder paraganglioma) are exceedingly rare tumors accounting for less than 1% of extra adrenal pheochromocytomas and less than 0.05% of all bladder tumours. It is a catecholamine-secreting tumour of chromaffin cells and can arise anywhere in the genitourinary tract with the urinary bladder is the most common site (1). Although it could be totally asymptomatic, patients often present with headache, hypertension, palpitation, sweating, fainting or blurring of vision immediately after voiding (1, 2). Painless hematuria also is common (2). Most bladder Pheochromocytomas are benign. Only 10% of Pheochromocytomas are malignant and diagnosed according to the clinical behaviour; the presence of local recurrence or metastatic disease. Treatment is usually by open partial cystectomy. TURT is possible but has a high risk of hypertensive crisis due to catecholamine over secretion during resection. In this case report we will discuss a case of pheochromocytoma presented with obstructive urinary symptoms and treated successfully by TURT.

Case report: A 62 year old male smoker not known to have any medical illness was referred to our urology clinic at Prince Hamza Hospital (PHH) complaining of obstructive urinary symptoms mainly poor stream, hesitancy and straining. Physical exam was unremarkable, PSA total was 2.5 mg/dl, his urea and creatinine was normal. Urinary tract ultrasound was done and showed a large bladder mass originating from the anterior wall of the urinary bladder measuring 4.3 *3.5 cm with post void residual of 120cc. Uroflowmetry Q max was 9 ml/sec. CT scan and MRI showed multilobulated mass originating from anterior bladder wall (figure 1). During cystoscopy, a large bladder mass was seen originating from the anterior wall of the bladder protruding toward the bladder neck which explains the patient's symptoms. Pre operatively and during the diagnostic cystoscopy his blood pressure was within normal values around 120/80. Decision was made to go for transurethral resection of tumor (TURT). Early during the resection his blood pressure started to rise up to 220/120 so the procedure was held. Post operatively his blood pressure was observed for 24 hours and was normal. Nephrology consult was requested regarding the rise in blood pressure. He had no abnormal readings during post-operative period. On discharge, patient was asked to monitor his blood pressure regularly. No High readings were recorded. Histopathology report mistakenly showed transitional cell carcinoma of the bladder. Second stage TURT was planned 4 weeks later after proper cardiology consultation. During the second TURT hypertensive crisis happened again shortly after starting resection. The procedure was held. Histopathology this time revealed pheochromocytoma (paraganglioma). Biochemical workup was done which showed increased level of urinary metanephrine. TURT was planned for the third time. In order to complete the resection, preoperative preparation with alpha and beta antagonists 2 weeks before TURT were prescribed (doxazosin 4 mg once daily and bisoprolol 2.5 mg once daily). On the 3rd session of TURT, complete resection was done as shown in (figure 2) without any rise in his BP intraoperatively. In the Postoperative period the patient was doing well, all of his symptoms improved dramatically, and has no rise in his blood pressure. Urinary and plasma metanephrine level were done 2 weeks, 6 months, and 1 year after complete resection and were normal. Follow up biphasic CT scan at 9 months showed completely normal bladder with no recurrence (figure 3). Cystoscopy 1 year after resection showed normal bladder walls with no recurrence.

Discussion and review of literature: Correct preoperative identification of bladder Pheochromocytomas is important. Unsuspected bladder Pheochromocytomas may result in intraoperative hypertensive crises and greatly increase the perioperative mortality forcing the surgeon to terminate cystoscopic tumor resection (3). preoperative stabilization of hypertension strategy is necessary as in other pheochromocytomas with α -blockade using phenoxybenzamine. β -Blockade may be added

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to counteract the rebound tachycardia. Certain patients may require calcium channel blockers such as Nifedipine to maintain adequate control (1). However, due to its rarity compared to urothelial carcinoma. Urologists usually do not put it in differential diagnoses when dealing with bladder mass. Ultrasonography (USG), Computed tomography (CT) magnetic resonance imaging MRI and Metaiodobenzylguanidine (MIBG) scintigraphy are imaging modalities used for the diagnosis of urinary bladder Pheochromocytomas. While urothelial carcinoma is a hypovascular lesion, bladder Pheochromocytomas should always be considered when a hypervascular lesions seen in the bladder by enhanced CT scan (4). Sudden increase of catecholamine release during micturition is responsible for characteristic symptoms of sharp headache, hypertension, palpitation, sweating, fainting or blurring of vision immediately after voiding (1). About one forth of urinary bladder Pheochromocytomas are non-functional. Painless hematuria has been seen in 50-60% (3). Our patient has completely different presentation of obstructive urinary symptoms without hematuria or adreno-sympathetic symptoms during micturition. Patients cure best achieved by surgery, the most common surgical procedure performed for bladder Pheochromocytomas is Partial cystectomy. Laparoscopic excision also reported for many cases with bladder Pheochromocytomas. Radical cystectomy with pelvic lymph nodal dissection is the procedure of choice for malignant disease (1). About 20% of published cases that where localized or locally advanced treated by TURT.

Pathologist may misdiagnose bladder Pheochromocytomas as urothelial cancer, The major histologic features that led to misdiagnosis included a diffuse growth pattern, focal clear cells, necrosis, and frequent involvement of the muscularis propria, with significant cautery artifact compounding the diagnostic problems, some pathologists fail to include Pheochromocytomas in their differential diagnosis when evaluating a bladder tumor (5). Since bladder pheochromocytomas may be malignant, patients should receive longterm follow up after initial surgery. Life-long follow up with annual determination of catecholamine production is required because of late endocrinal manifestations and metastasis in this tumor (5).

Conclusion: Single or multiple stages TURT is feasible option for treatment of bladder pheochromocytoma. Sudden rise of blood pressure during TURT for bladder mass should raise the suspicion of bladder pheochromocytoma. Preoperative alpha and B blocker 2 weeks before the surgery is mandatory to prevent intraoperative hypertensive crisis during resection. Long term follow up after complete resection is advised.

Keywords: Bladder pheochromocytoma; Paraganglioma; Extra-adrenal

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