

Are We Still Asking - Why Day Care Surgery in Urology?

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Abstract

The practice of surgery as day care has been increasingly recognized as the standard of care. Amongst different surgical disciplines, urology holds a special place in day care scenario. Many urological procedures can be easily conducted in ambulatory set up and benefits patients, their families as well as health care providers.

Introduction

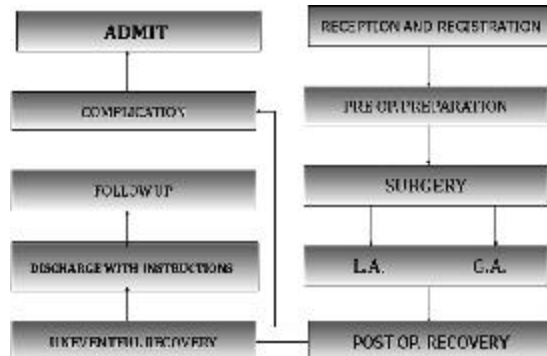
Urology is ideally suited to the day care concept. The concept of day care surgery was already in vogue 2000 years ago, in the era of Shushrut.¹ Birth of day care concept in urology probably took place with the age old practice of ambulatory catheterization. Indian hospital statistics support the widespread practice of urologic procedures in ambulatory set-up since last decade.^{1,2} With advancements in lithotripsy, advent of slimmer endoscopes, developments in laser technology and better anaesthetic techniques, newer procedures have been included in the horizon of day care urology (DCU).

DCU Set Up

An ideal set-up for ambulatory urology should contain a reception with record keeping area, a small consultation room, a well equipped modern operating room with a C-arm and lithotripter, a 2-3 bedded recovery. About 800-900 sq. feet area can well cater to these needs. An experienced anaesthetist and supporting staff is the bottom line. The urologist should be well experienced in endourology. Good record keeping is absolutely essential.

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Table 1 : DCU set up



Anaesthesia in DCU

The success of ambulatory anaesthesia revolves around short acting agents like ketamine and propofol. Various regional blocks have also been very helpful, most notable being penile block and prostatic block. Prostatic block aims to block the prostatic sensory branches of the neurovascular bundle that originate in the inferior hypogastric plexus, located at the tip of seminal vesicles (Fig.1). The block is performed most commonly by transrectal route guiding needle towards base of prostate near prostate-seminal vesicle junction. Prostatic block is safe, simple, effective and more tolerable than general or spinal anaesthesia. It allows surgery on high risk patients. Procedures like TURP, TUIP, VIU, BNI, TURBT have been performed safely with prostatic block anaesthesia.^{3,4} Various scoring systems have

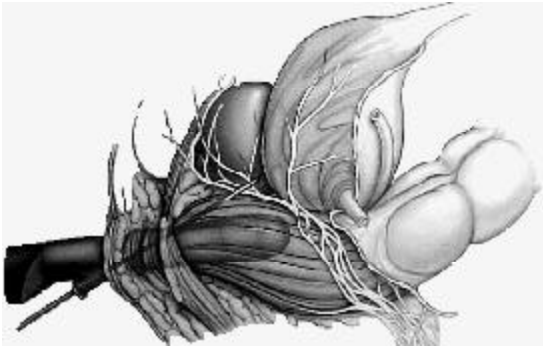


Fig.1 : Prostatic Block- schematic diagram

evolved to assess recovery in ambulatory anaesthesia. The Post Anaesthesia Discharge Scoring System (PADSS) is a simple method to assess home readiness of all ambulatory surgical patients.⁵ The parameters assessed are: vital signs, activity level, nausea and vomiting, pain and surgical bleeding.

DCU Case Register

The commonly performed surgeries in adult patients are diagnostic urethroscopy, endodilatation, VIU, diagnostic cystoscopies, cystolithotripsy, hydrodistension, RGP, DJ stenting, DJ stent removal, cold biopsy of bladder tumours, TURBT, Botox injections in overactive bladder. Ureteroscopies, circumcision, varicocelectomy, orchiectomy, orchiopexy, vasectomy and reversal of vasectomy, arterio-venous fistulas are also performed commonly in office set-up. Patients are sometimes sent home with a Foley's catheter and called for a trial without catheter (TWOC) following day. Ambulatory surgery is also well suited to paediatric procedures like paediatric cystoscopies, PUV fulgurations, paediatric ureterorenoscopies, STING procedure (submucosal teflon/ deflux injection) for VUR.

Management of Prostate in DCU

For decades transurethral resection of prostate (TURP) has been the standard of care

for patients with LUTS/BPH. The cons of performing TURP in day care setting are associated morbidities like TURP syndrome, longer post-op catheterisation time, need for blood transfusion and post-op irrigation. Presently with better equipments, TURP has been successfully performed as day care in case of small prostate (< 50 ml) with no co-morbidities⁶. The advent of LASER has revolutionized the management of even large prostates in day care setting. Holmium Laser uses 60-100 W power and a 550 or 1000 μ fibre. It works by the principle of enucleation. It may also be used for vapourization of small prostates but has high retreatment rate.⁷ Holmium Laser Enucleation of Prostate (HoLEP) enables relatively blood less surgery, brief catheterisation and hospital stay and immediate symptomatic improvement. It is also safe in patients on anticoagulants, patients with IHD or coagulopathies.⁸ Another inventory, the Potassium titanyl phosphate (KTP) Laser uses 60 W power with a continuous flowing cystoscope and saline irrigation. It acts by tissue heating and instant vapourization. Continuous wash out of the vapour by irrigation limits depth of thermal penetration to 1-2 mm. Beyond the vapourisation zone, a coagulation zone of 1-2 mm develops that achieves haemostasis and limits post-op oedema and sloughing. Minimal procedural morbidity, short catheterisation time and significant improvements in bothersome index and uroflow soon after surgery makes Green light KTP Laser a powerful tool in the hands of modern day care urologist.⁹ Transurethral resection using bipolar cautery (Plasma Kinetic cautery) and normal saline irrigant is also a significant addition to the armamentarium of today's ambulatory urologist. It is feasible, safe and comparable to the gold standard TURP in terms of efficacy.¹⁰ It also has minimal morbidity and no increase in post-op erectile

dysfunction. Other treatment options for BPH like transurethral needle ablation (TUNA),¹¹ transurethral balloon dilatation of prostate (TUBDP),¹² transurethral ethanol ablation of prostate (TEAP)¹³ are also suited to DCU setting.

Management of Urolithiasis in DCU

Endoscopic treatment of urolithiasis in DCU was mainly limited to lower, mid and small upper ureteral calculi using the semirigid ureteroscopes till last few years. The availability of flexible ureterorenoscopes have pioneered the concept of retrograde intrarenal surgery (RIRS) whereby even renal calculi can be managed comfortably in ambulatory settings. Almost any calyx can be approached retrograde and Laser lithotripsy allows treatment of stones upto 1.5 cm easily in DCU units.

Management of PUJ obstruction in DCU

Endopyelotomy for short segment PUJ strictures has been a well established practice in urology. Uncontrolled bleeding and pelvic perforation are the most common risks associated with this procedure. Laser endopyelotomy by superior haemostasis and controlled depth of tissue penetration makes it feasible in DCU set-up.

Management of Incontinence in DCU

Management of stress urinary incontinence in females can be easily performed in DCU.¹⁴ Transvaginal tape (TVT) or Transobturator tape (TOT) surgeries rely on principle of mid-urethral support using prosthetic mesh. TOT involves use of a subfascial hammock made of polypropylene mesh sling with plastic sheath and two helical needle introducers. TOT avoids intra-pelvic and retropubic passage of needle introducers thereby decreases risk of organ damage associated with TVT. Also the lie of the tape much more

horizontal thanTVT; risk of over-correction, voiding difficulties and de novo bladder over activity is much reduced.

Laparoscopic Urology in Day Care Era

An array of minimally invasive surgeries is already being performed in DCU¹⁵. These include renal biopsy, varicocelectomy, cyst decortications, Rovsing's procedure, pelvic lymphadenectomy, ureterolithotomy, nephrectomy, nephropexy. Both transperitoneal as well as retroperitoneal surgeries are suitable to ambulatory surgery concept with minimal complications.

Paediatric Procedures in DCU

Procedures like ureteral reimplantation, pyeloplasty, partial nephrectomy, nephrectomy, complete ureterocoele reconstruction have also been successfully performed in paediatric age group as ambulatory surgeries.¹⁶ Complications are rare and children can be comfortably managed at home even with parents with average intelligence.

Robotics in DCU

Robotic surgery has been a significant advancement in minimally invasive surgery approach. It renders 3D vision with a 10× magnification, more natural and ergonomic surgical feel, and enhanced dexterity and precision. Operative blood loss is minimal and excellent post-op pain score can be achieved. Presently the duration of hospitalisation in robotic radical prostatectomy is 25.9 hrs and 97% patients can be discharged on the day following surgery.¹⁷ With ongoing advancements robotic surgery is also expected to enter the DCU scenario in no time.

Ideal OT List

Surgeries in DCU should be well planned. Operations may be started at 8:00 am in morning and finished comfortably by 6:00 pm

Table 2 : Ideal OT List

- 1st Case: TUR/ RIRS/Paediatric procedures
- 2nd Case: TVT/TOT
- 3rd Case: URS/ VIU/ Cystolithotripsy
- 4th Case: DJ Stenting/ Cystoscopy ± Bx
- 5th Case: Prostate Bx/ Testicular Bx

in evening. An ideal OT list (Table 2) should allow flexibility and yet ensure adequate time to recovery prior to home readiness.

Discussion

The birth of day care surgery in modern era started with surgical management of sick children.¹⁸ Day care urology has been growing continuously. The procedures conducted in DCU are reasonably safe with minimal complication risk. The set-up is manned by experienced urologist and anaesthetist. New anaesthetic techniques have enabled performance of more complex procedures on sicker patients and those belonging to extremes of age. The economic, social, health and personal benefits to patients undergoing major surgery in day care setting are not simply obvious but tremendously cost-effective and efficient. Patients would rather shell out an initial extra buck rather than be stingy and end up paying a lot more due to prolonged hospital stay and a much greater use of antibiotics, analgesics, and other medications. Less invasive procedures result in better patient tolerance equating a decrease in over-all medical care post surgery. Also today's patients are more concerned and knowledgeable of the different treatment modalities and consequences. Patients also take part actively in peri-operative decision making, attributable to the internet revolution and more liberal education of the general population. Day care urology reduces the hospital stay and total cost, makes a significant impact on social aspect of

healthcare system. This has led to its widespread acceptance and the increasing number of procedures conducted in day care purview.

Conclusion

With all due precautions, careful patient selection and meticulous patient preparation, day care urology has a wide safety margin and good success rates. The economic advantage and the ability to treat large volume of patients quickly and efficiently have hastened its acceptance.

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PROGRESSION IN THE FIELD OF DIABETIC RETINOPATHY

Diabetic retinopathy is the leading cause of vision loss in working-age adults. Although laser treatment has been proven to slow or prevent progression of vision loss, it is also associated with ocular side-effects such as visual field reduction. It has been suggested that disease progression could be managed with lipid-lowering therapy. In the FIELD study, Tony Keech and colleagues investigated the outcome of lipid-lowering therapy with fenofibrate in patients with type 2 diabetes mellitus. They noted that the requirement for first laser treatment was significantly lower in patients given fenofibrate than in those given placebo. Rafael and Cristina note that the mechanisms by which fenofibrate slows disease progression require further elucidation before this treatment can be launched therapeutically.

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