

SRB's

Surgical Operations

Text and Atlas

Jaypee Brothers

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Second Edition

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*This book is dedicated to
My beloved father*

Late Mr Krishna Bhat Muguli



from whom I have learnt *simplicity, contentment, humility and dedication*
and

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Foreword

It is my pleasure to write a foreword for *SRB's Surgical Operations: Text and Atlas*, second edition. Let me, at the outset, congratulate Dr Sriram Bhat M for launching this fantastic book. Dr Bhat belongs to a rare breed of surgeons, who has not only mastered the art of excellence of teaching but also bestowed with superb skill in surgery and documentation. This facet has been put on record by bagging Good Teacher Award twice from Kasturba Medical College, Mangaluru, a constituent college of prestigious university, Manipal Academy of Higher Education (MAHE), Manipal and churning out about half a dozen textbooks related to surgery. These books have been well received and sold like cakes within India and abroad.

I have gone through the contents of this book and it is quite fascinating. It has about 1,450 pages containing colored illustrations of operative procedures spread across fields of general surgery, gastrointestinal tract surgery, urology, vascular surgery, and basic laparoscopy. A study of this book, at the very least, stimulates surgeons to think about their own technique. It is unlikely that a surgeon who is expert in a particular operation will turn to this book for advice about that operation, but it is to be expected that the same surgeon will obtain useful information from this book when called upon to operate in less familiar field. I sincerely appreciate and applaud with deep admiration the efforts put in by Dr Bhat (fondly referred as SRB by his students and colleagues) devoting his valuable time at the cost of his family and professional life towards this esthetic collection which, in a nutshell, is extremely par excellent.

I, therefore, wholeheartedly support this book and recommend its use by undergraduate and postgraduate students, general surgeons, and all those who need guidance in the field of operative surgery and basic laparoscopy.



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Foreword

No matter how well read and proficient in clinical skills, the ultimate test of a surgeon is the operation theatre. Although a mastery of operative surgery does require a lifetime's practice, having a good teacher/mentor and access to a thorough text on operative surgery, will shorten the learning curve. This textbook with its exhaustive coverage of practically all surgical procedures (common and otherwise) will definitely be useful to both undergraduate and postgraduate students of surgery as well as practitioners of the art. The plentiful illustrations are simple and enhance the understanding.

It is my distinct privilege to have been associated with Dr Sriram Bhat M since his time as a postgraduate in surgery and has a great love for teaching. The large number of students who flock his weekly bedside clinics in Government Wenlock Hospital, ever since he joined the faculty of general surgery, is a testament to his ability to impart knowledge. Having worked with him for over 20 years, I have seen him growing in stature and knowledge as a surgeon. He picks up new skills like laparoscopy through sheer hard work. Dr Bhat also has prodigious literary output. He has written more than five books in relation to surgery for medical, dental and nursing graduates. His *SRB's Manual of Surgery* has proved hugely popular among undergraduates in India and abroad. Having seen his labour day and night at documenting the various surgical procedures and, of course, the laborious collating, writing and proofreading often into the wee hours of the morning reminded me of Duke Elder (of the classic ophthalmic text) who reputedly made with barely an hour's sleep! I thank Dr Bhat for giving me this unique honour of writing the foreword for this operative book which I am certain will also prove equally popular and useful.



Ashok Pandit MS MCh (Urology)
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Preface to the Second Edition

It is a great pleasure to bring this second edition of *SRB's Surgical Operations: Text and Atlas*, almost 4 years after the release of the first edition in 2014. The first edition was received very well by the postgraduate students and fellow colleagues and on their insistence I intend to bring out the second edition. The main aim of this book is to reach out all students, the basic principles involved in the art of surgery by bringing out in a lucid way, the steps involved in various procedures, from simplest of the procedures to the most complex radical surgeries. There were few shortcomings in the first edition. They are addressed adequately along with correction of mistakes in the text and diagram. Few current concepts are updated in most of the chapters. Few chapters are rearranged. Hernia chapter is brought earlier as 19th chapter. I deeply indebted all those who supported me to bring out this edition.

My special thanks to our beloved Group Chairman Shri Jitendar P Vij of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, for his constant encouragement for all my works.

I always remember all my patients from whom I have taken different photographs for the book. I wish and pray for their health and recovery.

I accept any criticism and comments about this edition from readers and followers of this book. I hope this edition will be immensely helpful to all surgical postgraduates and all practicing surgeons of this country and abroad in treating different conditions surgically.

Sriram Bhat M

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Preface to the First Edition

It was my long dream after writing *SRB's Manual of Surgery* to pen in relations to operative technique in detail from simplest procedure to essential advanced major procedures needed to general surgeons and surgical postgraduates. I took nearly 4 years to make my dream near true in the form of *SRB's Surgical Operations: Text and Atlas*. I have included umpteen numbers of illustrations and photographs. Basic principles and techniques of suturing and dissection are also dealt with in detail. It will be useful to all categories of students and consultants to learn the basics. Gastrointestinal surgery is discussed in detail with illustrations. Urology mainly open methods are discussed adequately if not extensively. Basic laparoscopy and usual laparoscopy surgeries are discussed with highlighting the robotic surgeries, liposuction and so on. It differs from other operative surgery books by its unique presentations in detail with surgical anatomy and operative photographs of most of the procedures. I presume students and consultants will enjoy its reading. I am always grateful to Shri Jitendar P Vij (Group Chairman) of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, for his support and encouragement towards me to bring out this book. Any comments and healthy criticisms are well accepted.

Sriram Bhat M

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- I always remember my senior teachers, Professor CR Ballal, Professor Suresh Kamath, Professor K Prakash Rao, *Late* Professor Subramanya Bhat, Professor Bhaskar Shetty and Professor Ramachandra Pai, for their constant help.
- I thank Professor K Ganesh Pai, Paediatric Surgeon, for his encouragement and for writing foreword to this book. He was my thesis guide and is a renowned Paediatric Surgeon.
- I thank my beloved friend, popular Urologist, Dr Ashok Pandit, Mangaluru, who has been helping me in my entire surgical career. He happily agreed to write foreword to this book.
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- My wife Dr Meera Karanth P, helped me day and night in revising this edition and without her help this could not have been possible. My beloved daughter Ananya, helped me in drawing new diagrams artistically. I enjoy her love and affection towards me.

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- I thank all my students especially postgraduates of surgery department, who were helping regularly in bringing out this edition.
- Words are not sufficient to remember all my patients, who are the main material for the book. I pray for their good health always.
- I appreciate Shri Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President), Ms Ritu Sharma (Director—Content Strategy), Ms Sunita Katla (PA to Group Chairman and Publishing Manager), and their whole team of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, for doing appreciable work in their respective field of printing and publishing. Also my appreciation to working team in Jaypee Brothers Medical Publishers (Bengaluru and Mangaluru branches), for their timely help.

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Retroperitoneal Surgeries

■ SURGICAL ANATOMY

This is the space between the peritoneal cavity and posterior abdominal wall. It is bounded anteriorly by posterior parietal peritoneum and contents of the peritoneal cavity; posteriorly by vertebral column, psoas, iliacus, quadratus lumborum muscles, and tendinous portion of transversus abdominis muscles; superiorly by diaphragm; inferiorly by pelvic levator muscles (by Ackerman). It is real potential space (**Fig. 27-1**).

Three spaces are defined in the retroperitoneum. *Anterior paranephric space* is located between the parietal peritoneum and Gerota's fascia. *Middle perinephric space* is bounded in front by Gerota's fascia and behind by Zuckerkandl's fascia; it contains kidney, adrenal, renal pelvis and proximal ureter and renal vessels. *Posterior paranephric space* is located between Zuckerkandl's fascia and transversalis fascia.

Retroperitoneum contains vessels (aorta, inferior vena cava, portal veins); kidney and ureters; pancreas, duodenum, parts of colon, rectosigmoid; lymphatics, cisterna chyli and thoracic duct; celiac, superior and inferior hypogastric, sacral sympathetic chains; ilioinguinal, iliohypogastric, lateral cutaneous, femoral, genitofemoral, obturator, sciatic and pudendal.

Retroperitoneal tumours, secondaries, aneurysms, retroperitoneal haematoma, abscess, retroperitoneal fibrosis (Ormond's) are different conditions which can occur in this space. It is an extensive space. Dissection in this space is tedious, bleeds from major or small vessels torrentially (**Fig. 27-2**).

■ APPROACHES FOR RETROPERITONEUM

Transperitoneal lengthy midline incision is very useful approach for both sides of the retroperitoneum.

Loin incision extraperitoneally like approaches to kidney and ureter (**Fig. 27-3**).

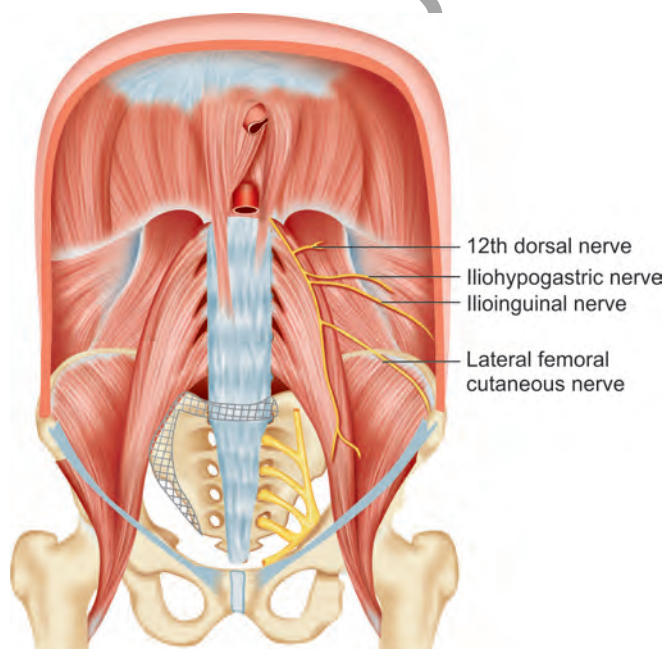


Fig. 27-1: Retroperitoneal anatomy.

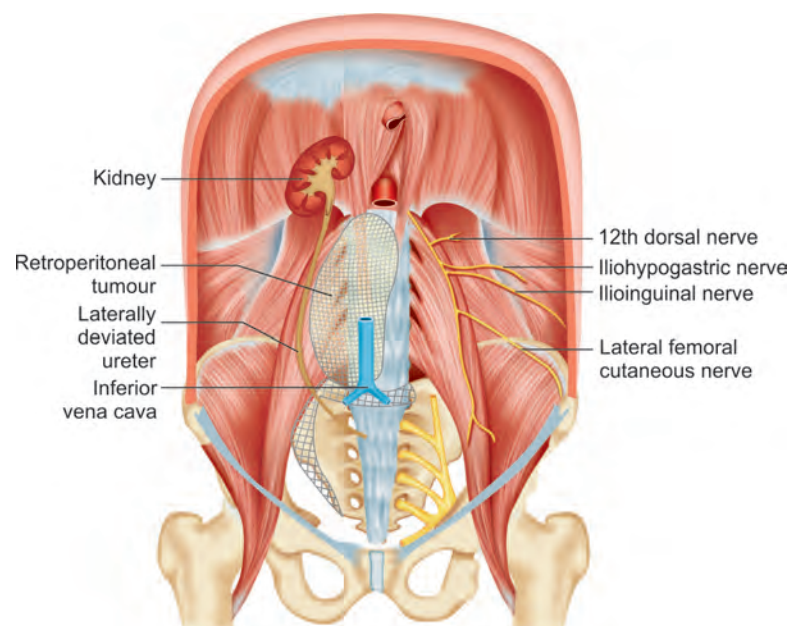


Fig. 27-2: Retroperitoneal tumour.

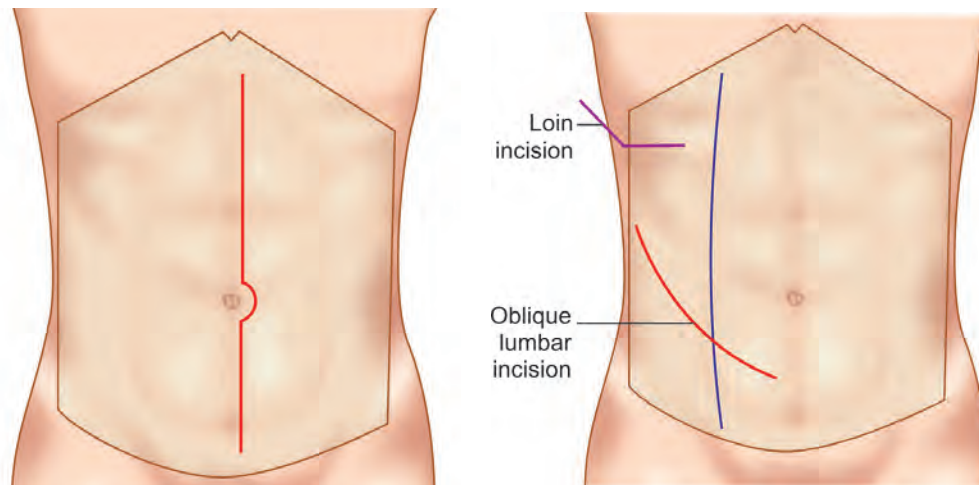


Fig. 27-3: Approaches for retroperitoneum—lengthy midline; oblique loin or loin incision in lateral position.

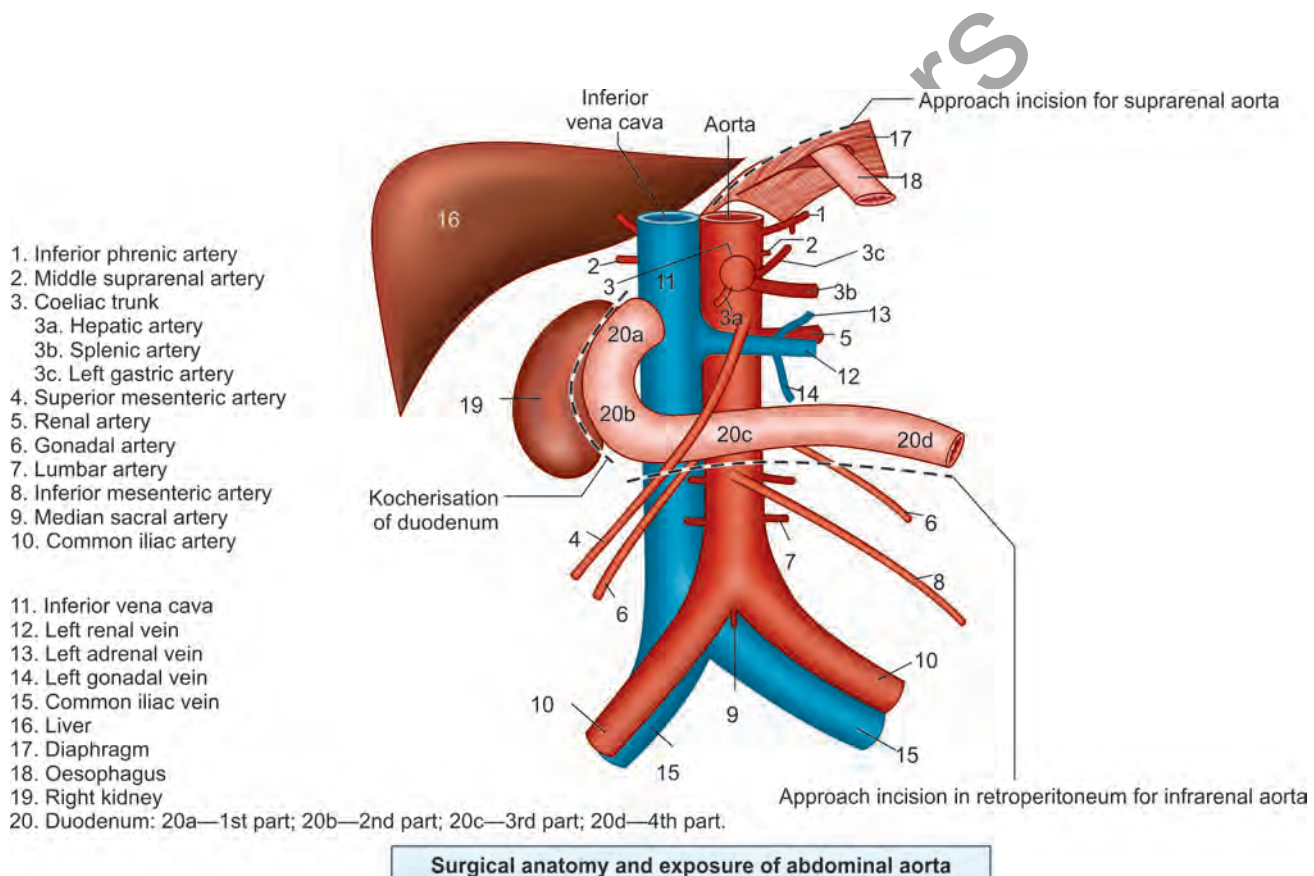


Fig. 27-4: Retroperitoneal approaches for aorta and lymph nodes.

Laparoscopic approach is very good to do retroperitoneal lymph node dissection.

Robotic assisted laparoscopic RPLND—is current trend.

Structures approached through retroperitoneum (other than kidneys and ureters) are (Fig. 27-4):

- Aorta and its major branches.
- Retroperitoneal lymph nodes.
- Retroperitoneal tumour.
- Inferior vena cava and portal veins.
- Lumbar sympathetic chains.

RETROPERITONEAL LYMPH NODE DISSECTION (RPLND)

RPLND is often specifically commonly done for testicular and ovarian tumours. It is often also done in other malignancies like carcinoma cervix, endometrium, rectum, etc. Nonseminomatous germ cell tumour of stage I and IIa shows good benefit. RPLND is used for staging as well as for therapy.

Both open and laparoscopic approaches are used. Laparoscopic approach is better as magnification and dissection is better. Nerve sparing is better.

Right-sided RPLND includes complete dissection above the inferior mesenteric artery up to renal vessels; laterally up to both ureters; below along the bifurcation of the common iliac vessels on same side (right). *Left-sided RPLND* includes complete dissection above the inferior mesenteric artery up to renal vessels; laterally on left side up to left ureter; towards right up to the right margin of the IVC; below along the aortic bifurcation/bifurcation of common iliac vessels on same side. In certain conditions bilateral RPLND is also done.

Sympathetic nerve should be spared to maintain the ejaculation—nerve sparing RPLND. Erectile function is maintained as it is through parasympathetic fibers which are usually spared.

Preoperative Preparation

Patient should undergo complete metastatic work up RPLND is contraindicated as if there is evidence of blood spread or peritoneal spread. Peritoneal infection also temporarily precludes the surgery. Blood should be kept ready. Mechanical bowel preparation is needed. Nasogastric tube and Foley's catheter is passed.

Principles

Principles in RPLND are adequate exposure; meticulous dissection; haemostasis; use of bipolar cautery, proper retraction, safeguarding the bowel.

Technique

Right-sided RPLND: Right peritoneal fold (Toldt's line) is incised from hepatic flexure to medial umbilical ligament; colon is retracted medially by sharp dissection; colorenal and hepatorenal ligaments are divided by sharp dissection. Kocher's duodenal mobilisation is done. Great vessels are exposed. Right spermatic cord and internal inguinal ring are identified. Vas deferens crossing ureter and iliac vessels is dissected, clipped and transected. External, iliac vessels should be

safeguarded. Gonadal vein is dissected up to its joining to IVC; gonadal artery is dissected up to a point where it crosses and joins aorta. Gonadal vein is clipped and divided at its joining to IVC. Adventitia overlying the IVC is dissected carefully from renal vein level above and common iliac vessels level below. Right ureter is gently retracted laterally and lymphatics are dissected and retracted laterally. Ureter is dissected distally up to the point where it crosses the iliac vessels. Lymphatics with nodes are dissected and swept upwards. Sympathetic chain is identified and lymph nodes are dissected from behind without injuring the sympathetic chain. Inferior mesenteric artery and left renal artery is identified. Lumbar veins are identified and clipped before division. Intercavaortic nodes should be cleared. Accessory renal artery and retroaortic renal vein may get confused and ligated inadvertently; this should be avoided. IVC is retracted gently in front and tissues are dissected and brought towards specimen. Dissection up to the left ureter should be done in right RPLND (**Fig. 27-5**).

Left-sided RPLND: Dissection here is above up to left renal vein; left ureter laterally; bifurcation of left common iliac veins below; right margin of IVC towards right side. Left paracolic gutter peritoneum is incised. Left colon is mobilised including splenic flexure by dividing left renocolic, phrenocolic, splenocolic, gastrocolic and pancreaticocolic ligaments; left renal vein is identified and dissected. Below up to the bifurcation of the common iliac vessels dissection is done. Colon, spleen above mobilised medially; left internal inguinal ring and left vas deferens is identified; left vas deferens is divided after clipping. Left gonadal vein is dissected up to its joining into the left renal vein. Aorta and left ureter is identified and dissected to clear para-aortic lymph nodes. Dissection from aorta above towards iliac vessels downwards along the origin of inferior mesenteric artery is carried out to clear all lymph nodes. Lymphatics along the intercavaortic region from renal vein level to IMA level are cleared. IVC is dissected and retracted towards right to identify lumbar veins which are ligated and all tissues are swept towards left specimen side (**Fig. 27-6**).

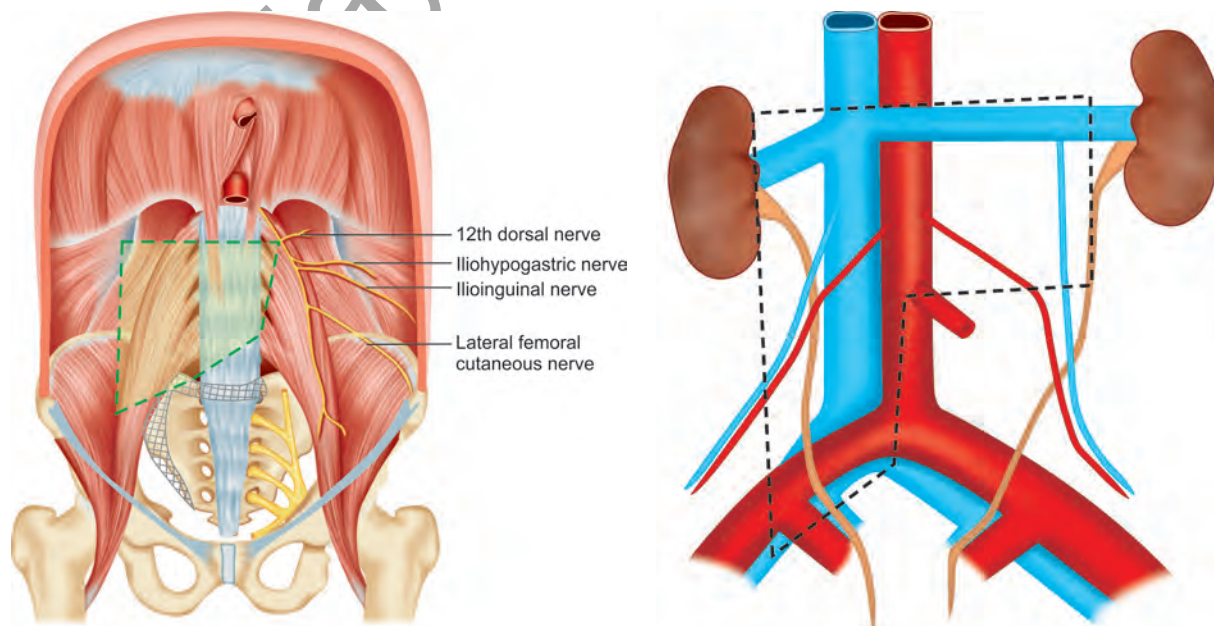


Fig. 27-5: Template for RPLND right side.

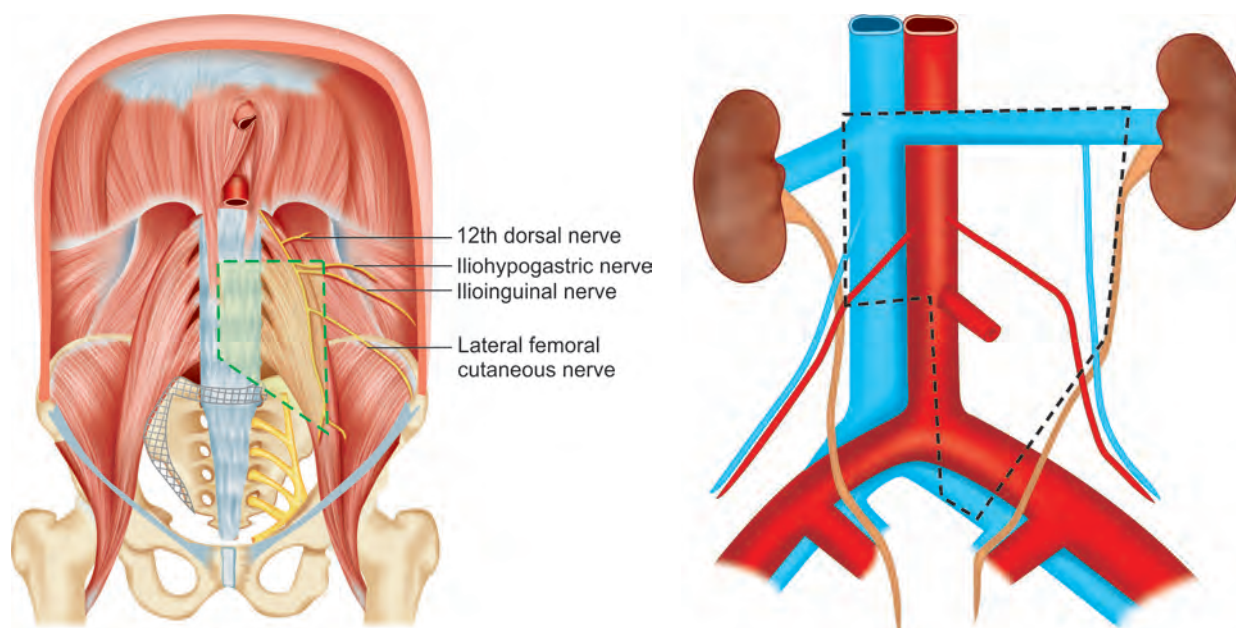


Fig. 27-6: Template for RPLND left side.

Complications

Haemorrhage occurs while dissecting and mobilising the IVC especially from its tributaries. Clipping the vessels is better way to prevent the haemorrhage.

Injury to ureter, stricture ureter (5%), and hydronephrosis due to surgical trauma can occur.

Lymphocele, chylous ascites due to lymphatic dissection is likely to develop often (3%).

Retrograde ejaculation due to sympathetic nerve damage can occur (5%). Nerve sparing surgery, avoiding monopolar cautery close to the sympathetic chain prevents this.

Contd...

Paralytic ileus is common due to retroperitoneal dissection. If it persists long time one should suspect haematoma, pancreatitis, urinary extravasation.

Sepsis is not uncommon—retroperitoneal or intra-abdominal abscess formation can occur. It is diagnosed by CT scan, usually responds with higher generation antibiotics; may require guided catheter drainage; occasionally only needs open drainage.

Contd...