



Renal Tract Stone Management –Paradigm Shift in Last Two Decades in Bangladesh

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Renal stone disease is a never ending problem of mankind and regarded as third most common disease of renal tract. The incidence and detection of renal stone dates back to prehistoric era. Nearly 50% incumbents encounter a recurrence within five years.¹

About 4-15% population worldwide gets affected by urolithiasis. Globally male female ratio is 2:1 and peak incidence is observed in 2nd to 5rd decade of life. Its prevalence is rising and primarily affects the working-age population. Men present more commonly than women, 10.6% vs. 7.1%.² In Bangladesh exact incidence of the disease is not recorded so far but still may be regarded as a common affliction of the active age group of population.

Presentation of the disease may be with acute or chronic features and sometimes with subacute scenario or even with silent chronic renal failure state. Both medical and surgical management are important to address this problem. Urologists are concerned with the surgical management of renal tract stones and they are untiringly giving efforts to improve the treatment modalities of this disease. As a result renal tract stone management encountered a tremendous development in this country during the last three decades. This is not only in terms of armamentarium but also in terms of qualified and skilled manpower development. Parallel to those congenial working environment for urologist was addressed at different levels of hospitals both in private and public sector.

Post liberation period tremendously suffered from scarcity of infrastructural development of surgical facilities, inadequate number of overall and trained manpower, inadequacy in dissemination of knowledge

and technical training, lack of midlevel trained nurses and other manpower. Inadequacy in diagnostic tools were also another hindrances in urological service delivery system. Open surgery was the only tool of management for all urological diseases. This had a tremendous burden on health care system and was not at all cost effective and beneficial for the service recipients.

In 1982 the discovery of Extracorporeal shock wave lithotripsy (ESWL) was amazing and made a major breakthrough in renal tract stone management in Europe. Subsequently it was regarded as gold standard for renal tract stone management in both developed and under developed world during next at least one decade. During late nineties ESWL related long term complications made a jeopardy in widespread adoption in renal tract stone management.

Percutaneous nephrolithotomy for renal stone was ... Percutaneous nephrolithotomy (PCNL) was first made available as a kidney stone therapy in 1976.¹ PCNL has become the typical approach to treating patients with kidney stones bigger than 2 cm in diameter, particularly those with staghorn stones.^{2,3}

Late nineties of the previous century was the time for a breakthrough for these bottlenecks when gradually the concept of keyhole surgeries were emerging worldwide. Miniaturization of endoscopic instruments (semi rigid ureteroscopes, mini nephroscopes), development of laparoscopic facilities, availability of flexible miniaturized instruments for upper renal tract, availability of Closed circuit TV monitor, application of new imaging facilities, different types of intracorporeal lithotripsy devices (pneumatic,

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ultrasonic, laser, shock pulse) revolutionized renal stone management in this part of the under developed world. Within next one decade at least twenty qualified urologists were in the field to encounter the fight in stone management.

Acute renal colic for small renal tract stones up to 7 mm size are addressed by emergency pain management and medical expulsive therapy particularly for lower ureteral stones. Lower sized stones may sometimes need intervention due to undiagnosed anatomic defects like congenital strictures or tight vesicoureteral junction.

Any surgical intervention to renal tract should be performed in presence of sterile urine as infected urine may endanger the life of patient resulting in urosepsis.

Open surgery for urinary tract stones at present is commonly not practiced by urologists and practically near to historical interest. This reality became possible due to tremendous development in man power and their acquaintance to miniaturized methods of surgical management eg ureteroscopy, RIRS, PCNL and laparoscopy.

Complete stag horn stones are dealt by multi tract single session (regular, midi and mini) PCNL. Residual stone may need a 2nd look PCNL. Today majority of the experts are happy to perform mostly midi and mini PCNL (prone or supine) to achieve 100% stone clearance with minimum perioperative complications with the use of shock pulse and laser energy source for disintegration of stones.

Retrograde intrarenal surgery (RIRS) is gradually getting popularity to deal renal stones up to 2 cm diameter particularly for stones at pelvis, mid, upper calyces and upper calyceal diverticular stones. Inferior calyceal stones need more expertise to deal with RIRS. Wide spread practice of RIRS is still limited due to long learning curve of the procedure and cost toxicity in our perspective.

Postoperative follow up protocol development and its maintenance is of utmost priority and need to be addressed genuinely for health and economic issues. Immediate postoperative complications (bleeding, infection, electrolyte imbalance, secondary hemorrhage, stent related symptoms) needs careful and close observation as few variables may be cause of extreme suffering and casualty. In late postoperative period these patients should be counselled for regular follow up in particular to their life style modification, dietary restrictions, fluid consumption and special issues regarding metabolic stones.

References

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