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A RETROSPECTIVE ANALYTICAL STUDY ON FORGOTTEN DOUBLE J URETERAL STENTS MANAGEMENT - OUR INSTITUTE EXPERIENCE

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ABSTRACT:

BACKGROUND:
Aim of this study is to analyse the incidence, risk factors and morbidity associated with Retained DJ stent and its management.

MATERIALS AND METHODS:
Retrospective analytical study duration of 4 years from APRIL 2020 TO APRIL 2024 from **DEPARTMENT OF UROLOGY** hospital records, Stanley medical college.
INCLUSION CRITERIA: Patients with >6 months forgotten DJ stents
EXCLUSION CRITERIA: Patients whose data are incomplete

RESULTS:
Out of 34 patients (n=34)25 patients were male,9 patients were female. Mean age of patients were 45 years. Mean indwelling time about 9 months. Most common symptoms irritative LUTS. All 34 patients in our study belong to low socioeconomic status with education status less than primary school. Most common indication for stenting URSL(24 patients). Most common organism isolated in urine culture klebsiella (8 patients). Stent encrustations and complications like stent breakage and sepsis are more when it is retained for more than 2 years.All cases managed successfully by multimodal endourological methods in our tertiary care hospital.

CONCLUSION:
DJ ureteral stent is like double edged sword. Lack of awareness of complications of retained DJstent is the main reason for forgotten DJstents.The best treatment is prevention.Proper Education and stent tracking register will reduce the incidence of forgotten DJ stents.

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KEYWORDS:
DOUBLE J URETERAL STENTS, URETEROSCOPIC LITHOTRIPSY (URSL), PERCUTANEOUS LITHOTRIPSY (PCNL), VESICOLITHOTRIPSY, LOWER URINARY TRACT SYMPTOMS (LUTS).

INTRODUCTION:

Double J Ureteral Stents are widely used tool in urology in management of patients with ureteric calculi; ureteric stricture; retroperitoneal tumors or fibrosis; ureteropelvic junction obstruction or in any ureteric injury. The DJ stent has been proven to have various short term and long-term complications. Short term complications include infection, hematuria, pain and stent syndrome. Long term complications can results in encrustations, stone formation,fractures and blockades of stents, hydronephrosis and at times renal function loss.

AIMS AND OBJECTIVES:

DJ STENT encrustations increases with the duration that the stent remains indwelling .Encrustation rates for stent indwelling for 6 weeks, 6-12 weeks and more than 12 weeks are 9.2%,47.5%and 76.3%respectively. Normally DJ stent needs to be removed or replaced within 6 weeks to 6 months. The management plan depends upon the various factors like extent and location of encrustation, is stent broken etc. Forgotten ureteral stents need multimodal staged procedures like shockwave lithotripsy (SWL), ureteroscopic lithotripsy (URSL), vesicolithotripsy, and percutaneous nephrolithotomy (PCNL) alone and/or in combination for complete management. Our study we report our institute experience in the incidence, morbidity, and management of forgotten DJ stents.

MATERIALS AND METHOD:

Our study was retrospective analysis of data collected from hospital records, in Department of urology, Stanley medical college, Chennai. study duration of 4 years from April 2020 to April 2024. Inclusion Criteria: patients with more than
6 months forgotten DJ stents. Exclusion criteria: patients whose data are not available. A total of 34 patients data were collected from medical records and factors like duration of retained DJ stent, presenting complaints, type of previous procedures, current management for removal of retained DJ stent were noted. All patients were evaluated with clinical history, physical examination, and lab investigations urine culture sensitivity, renal function tests, x ray kidneyureterbladder(KUB), ultrasonogram KUB,CT KUB and in complex cases(broken stent, increased stone burden).The management was decided based on investigations.

RESULTS AND OBSERVATIONS:

Data of 34 (n=34) patients were collected. In all cases polyurethane stent was used. The mean age of the patients was 45 years. Out of 34 patients, 25 patients were male; 9 patients were female. The mean duration of indwelling stent was 9 months. All patients literacy level were below primary school level. All patients were from poor socioeconomic status. 10 patients forgot about their stent, and in 24 patients and relatives had misconception. Most common indications for stenting were ureteroscopic lithotripsy(URSL). 32 patients had encrustations and 2 patients had broken DJ stent.

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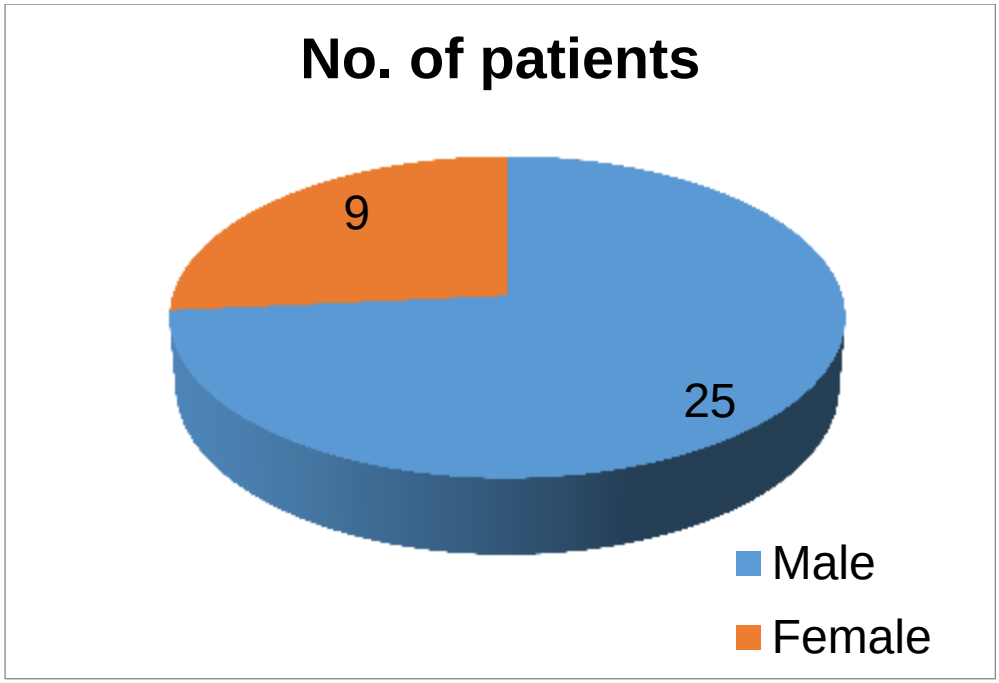


SYMPTOMS	NUMBER OF CASES
IRRITATIVE LUTS	18(52.9%)
DYSURIA	6(17.6%)
FLANK PAIN	5(14.7%)
SEPSIS	3 (8.8%)
HEMATURIA	2(5.8%)

STENT INDWELLING TIME	NO. OF PATIENTS
6 months to 1 year	25(73.5%)
1 year to 2 years	5(14.7%)
>2 years	4(11.8%)

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

INDICATION FOR STENTING	NO. OF PATIENTS
URSL	24(70.6%)
STENTING FOR ESWL	8(23.5%)
PCNL	1(2.9%)
GUTB	1(2.9%)

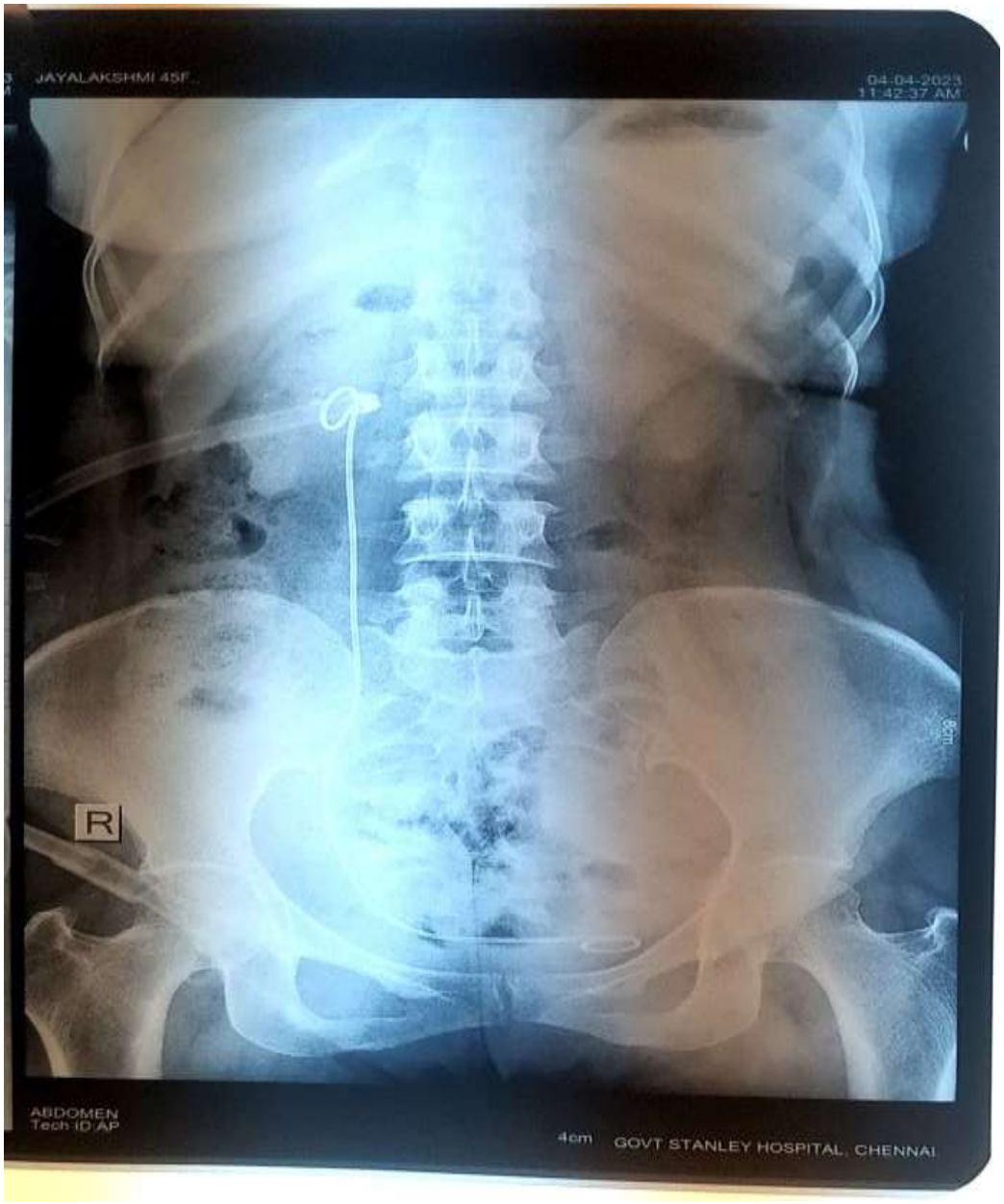
REASON CITED BY PATIENT FOR RETAINED STENT	NO. OF PATIENTS
Poor compliance	21
Forgotten	10
Misconception (lifetime)	2
Misconception (dissolve)	1

PROCEDURES DONE FOR RETAINED DJS	NUMBER OF CASES
URETEROSCOPIC LITHOTRIPSY (URSL)/ URS +DJ STENT REMOVAL	19 (55.9%)
PERCUTANEOUS NEPHROLITHOTOMY + URETEROSCOPIC LITHOTRIPSY + VESICOLITHOTRIPSY	5 (14.7%)

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

URETEROSCOPIC LITHOTRIPSY + VESICOLITHOTRIPSY	4 (11.8%)
VESICOLITHOTRIPSY	3 (8.8%)
URETEROSCOPIC LITHOTRIPSY + VESICOLITHROTRIPSY+ ESWL	3 (8.8%)

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

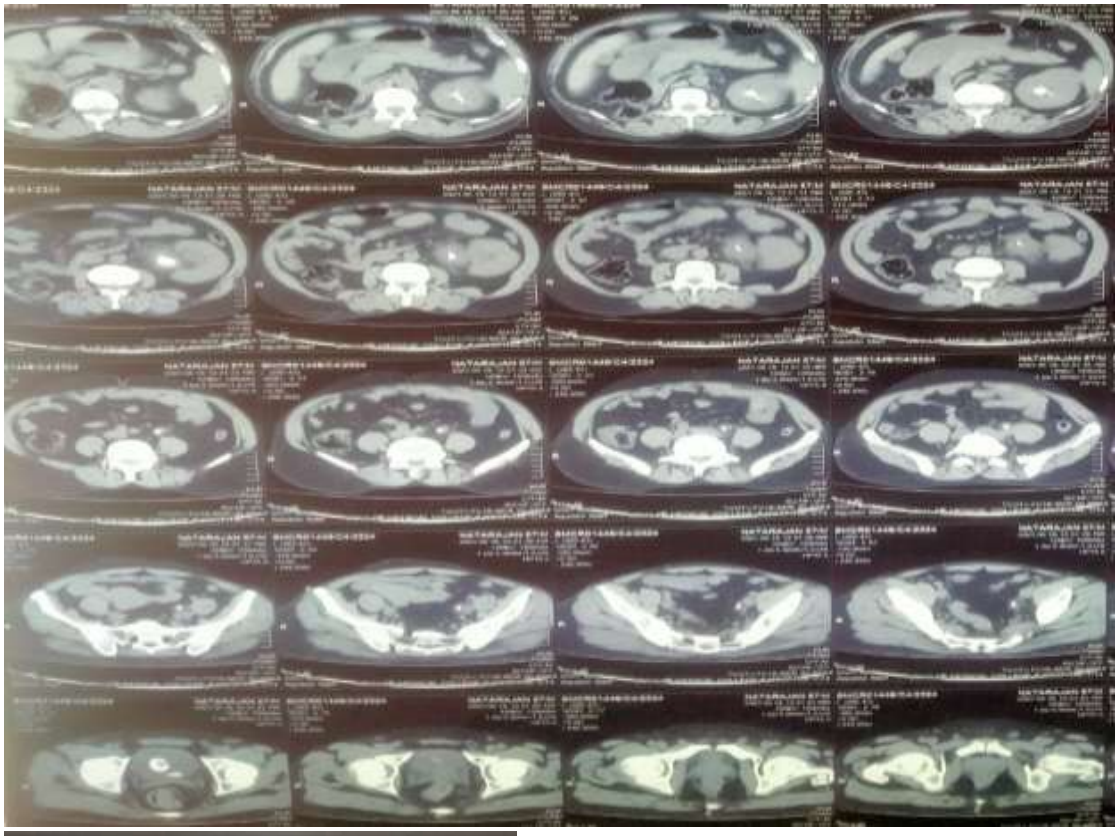


ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

2 year old Retained DJ stent; presented with sepsis, initially treated with higher IV antibiotics; after stabilisation, PCNL , URSL and vesicolithotripsy with removal of retained DJ stent was done .

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

19 months old Retained DJ stent with encrustations all over the stent. PCNL, URSL , Vesicolithrotripsy and retained stent removal was done

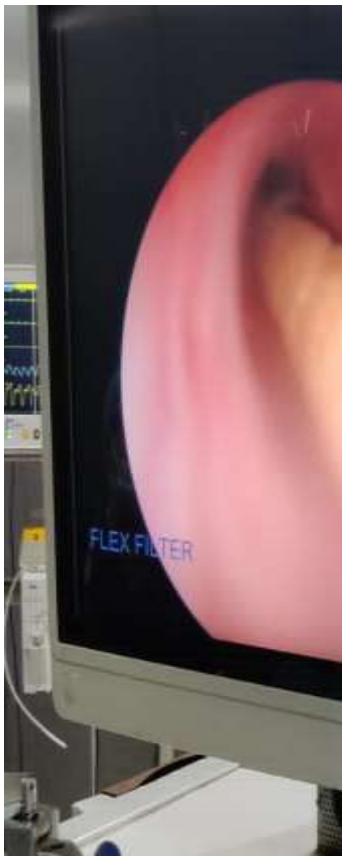


ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

REMOVED DJ STENT

8 year old retained DJ stent; presented with Urosepsis. X ray KUB shows B/L fractured DJ stent with B/L staghorn calculus and vesical calculus. Planned for staged endo procedure. In 1st sitting, we did vesicolithotripsy and RT PCNL , exchanged stent on right side with removal of distal fractured stent segment on left side. Now, we are planning to do PCNL on left side.

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024



FRACTURED RETAINED DJ STENT

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 5, 2024

DISCUSSION:

DJ stent is most essential armamentarium used in various endourological procedures.DJ stent if it is kept for long duration or forgotten causes significant morbidity to patients. In our study, the main cause of forgotten DJ stent was loss of follow up because of covid crisis. Patient did not get the opportunity to visit the hospital as scheduled. The most common presenting symptom were irritative LUTS 18 (52.9%) patients. In D'amiano et al study flank pain (25.3%) and storage LUTS were (18.8%). In EL-ABD et al case series the most prominent symptoms were LUTS (30.8%) followed by fever and UTI (20.4%).

The longer duration of indwelling stent increases complication; hence it is important to be removed or replaced on time. In our study, stent encrustation and recurrent urinary tract infection were the most common complications. Nawaz et al. study reported stent encrustations 10.5%, stent migration 3.5% and stent breakage 4.5% respectively. In our hospital, all cases underwent endourological procedure in single or staged sittings. Although all encrusted stents managed successfully, prevention is the best treatment. Patients and relatives should be thoroughly educated about the risks of forgotten DJ Stents. In our study, COVID crisis played a major cause as it forced people to stay indoors.

CONCLUSION:

Forgotten DJ Stent poses common problem in developing country and also brings lot of morbidity and financial burden to patients. It also has worse impact on already prevailing

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sparse health welfare infrastructure in developing countries. In most patients our institute did endourological treatment successfully with few patients requiring staged endourological procedures, without need for open surgery. Proper education and counselling of patients and relatives before and after procedure will help in reducing incidence of forgotten DJ Stent.

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