Results

The data of 47 patients included in this study summarized in the following tables and figures:

Table (3): Patients Demographic Data.

Data	Number	Percent
Total Number of Cases	47	
Age (mean±SD)	46.12±10.75	
BMI in Kg/sqm (mean±SD)	23.6±5.92 (8% were Morbid)	
Gender		
Male	30	63.8%
Female	17	36.2%
Co morbidity		
DM	1	2.1
COPD	1	2.1
Hypertension	2	4.2
IHD	1	2.1
Liver Disease(liver cirrhosis)	1	2.1
Multiple co morbidities	2	4.2
Previous Renal Stone Surgery (total)	6	12.7
Open	4	8.5
PCNL	2	4.2

This table shows demographic data of the studied cases (total number was 47 patients), mean age was 46.12 ±10.75 (range 24-65). BMI in Kg/sqm (mean ± SD) was 23.6±5.92 ((range 20- 43kg/m2), 4 patients, 8% were Morbid). The study included 30 males (63.8%) and 17 females (36.2%). one patient was diabetic (2.1 %), 1 patients had COPD (2.1 %), 2 patients were hypertensive (4.2%), 1 patients had IHD (2.1%), 1 patient had liver disease (2.1%), 2 patients had multiple co morbidities (2.1%). 6 patients had previous renal stone surgery, 12.7% (4 open and 2 PCNL).

Fig.(49): Mean Age & BMI.

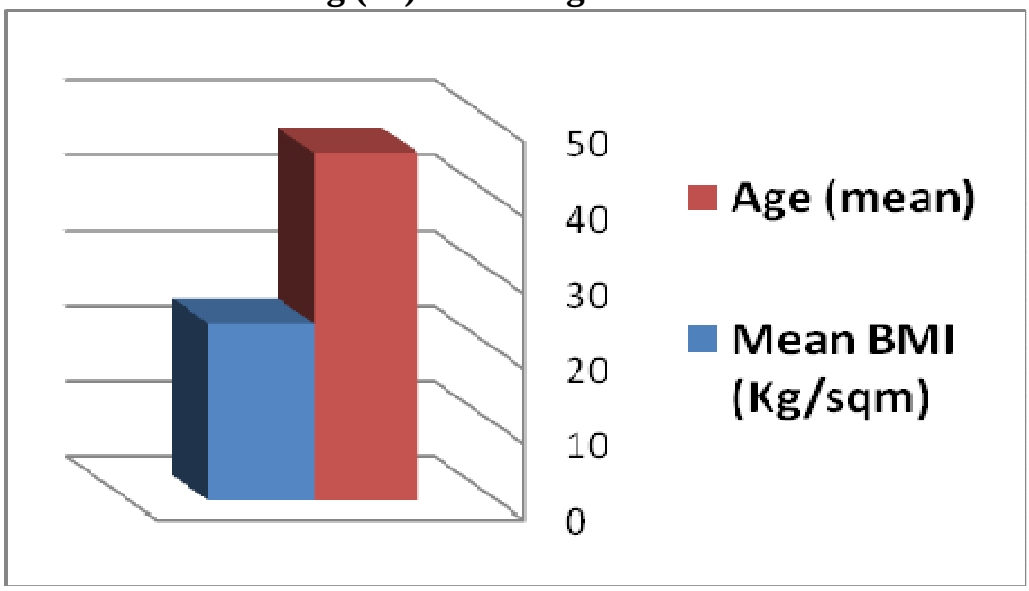

Fig.(50): Gender of cases

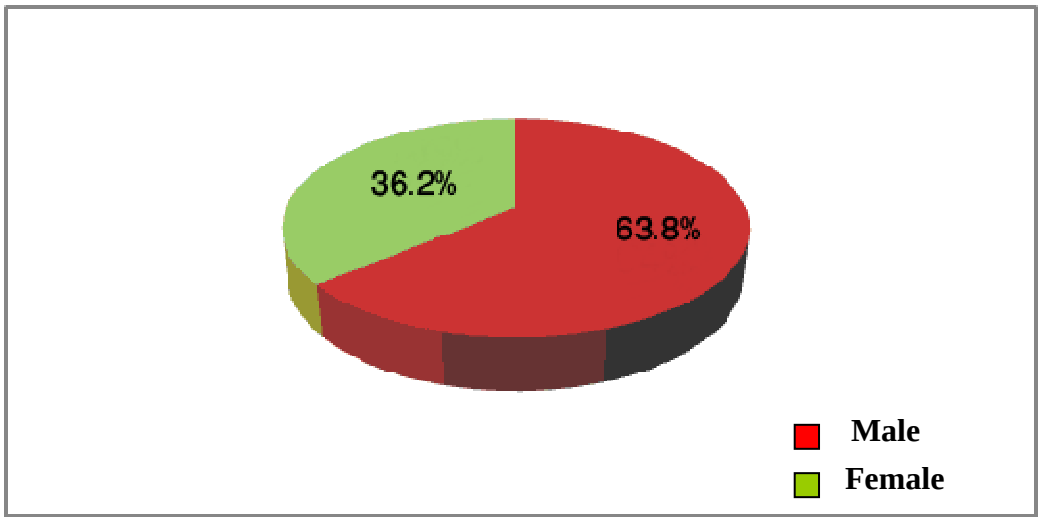

Fig.(51): Co morbidity in Percent.

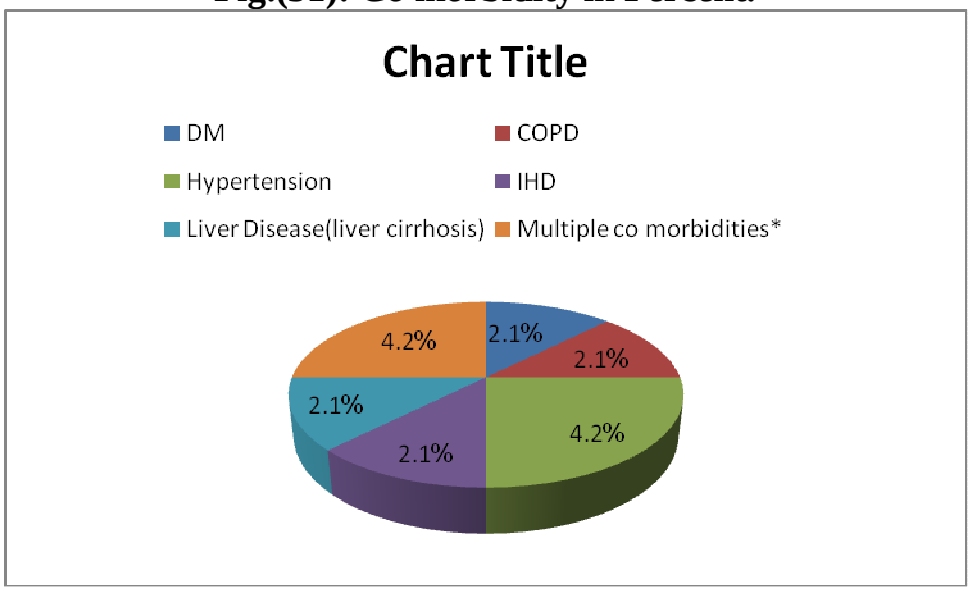

Fig. (52): Previous Renal Stone Surgery (%)

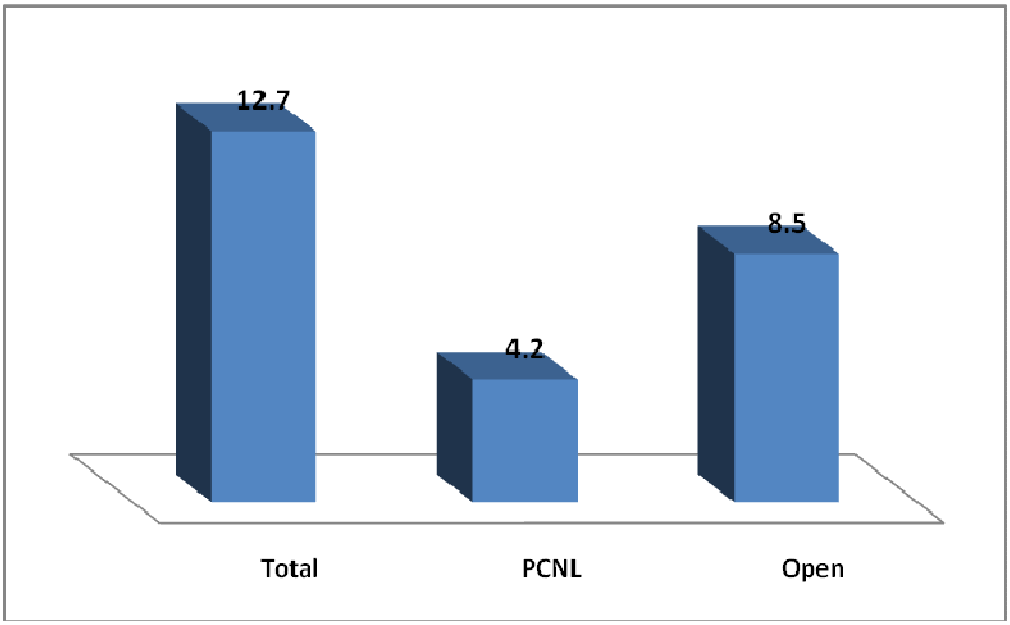

Table (4): Stone Characteristics

Data	Number	Percent (%)
Stone site:		
Staghorn	47	100
Complete	15	31.9
Partial	27	57.5
Border line	5	10.6
Stone side:		
Right	25	53.2
Left	22	46.8
***Stone size* mean±SD(cm)**	(4.2±8.4 cm)	
***Stone Radio-opacity*:**		
Opaque	42	89.4
Lucent	5	10.6

This table shows stone characteristics of the studied cases. As for stone site, 47 cases of staghorn stones; 15 cases of complete staghorn stones (31.9%) and 27 cases of partial staghorn stones (57.5%).As for stone side 5 cases (10.6%) were right sided and 22 cases (46.8%) were left sided. mean stone size range (4.2±8.4 cm). Fourty two of the cases had radio-opaque (89.4%), while 5 cases had radiolucent stone (10.6%).

Fig.(53): Stone Site

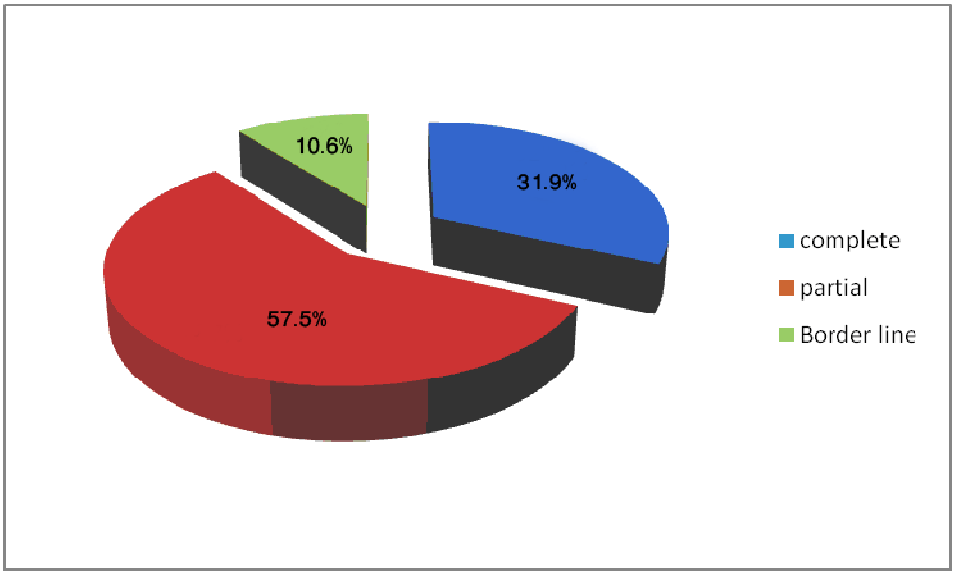

Fig. (54): Stone side

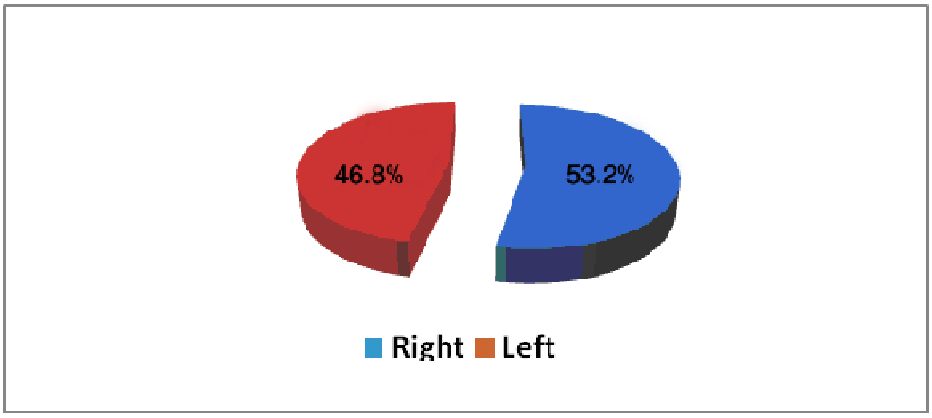

Fig.(55): Stone Radio-opacity

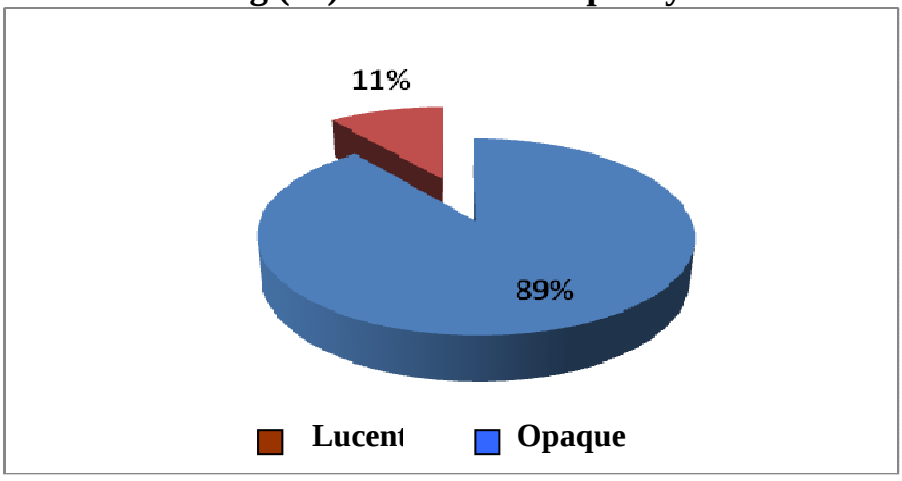

Table (5): Intraoperative Data

Data	Number	Percent
***Calyx Puncture*:**		
Upper Calyceal	34	72.3
Upper +Middle Clypeal	11	23.5
Upper +lower Calyceal	2	4.2
Mean Operative Time (anesthesia time in minutes)	120 (range: 90-200 min)	
No. of PNL sessions		
One	35	74.5
Two	10	21.3
Three	2	4.2

This table shows the intra-operative data of the studies cases. Upper clypeal puncture was used in 34 cases (72.3%), Upper +Middle Calyceal was used in 11 cases (23.5%), while Upper +lower Clypeal were used in 2 cases (4.2%). . Mean operative time was 120 minutes (range: 90-200 minutes). The number of PNL sessions was one in 35 cases (74.5%), two sessions in 10 cases (21.3%) and three sessions in 2 cases (4.2%).

Fig. (56): Calyx Puncture

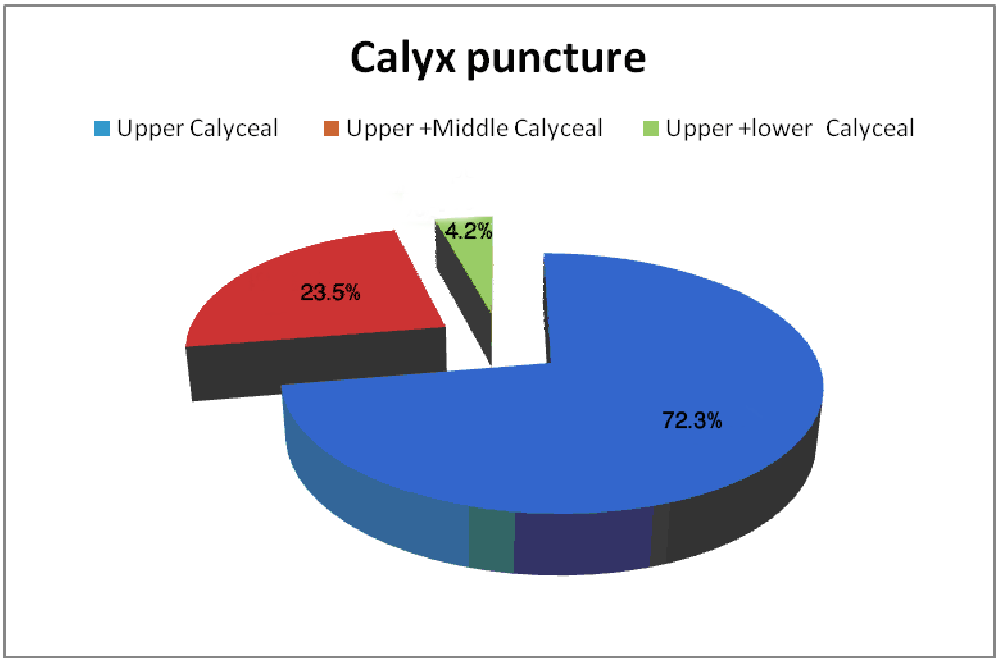

Fig. (57): No of PNL sessions

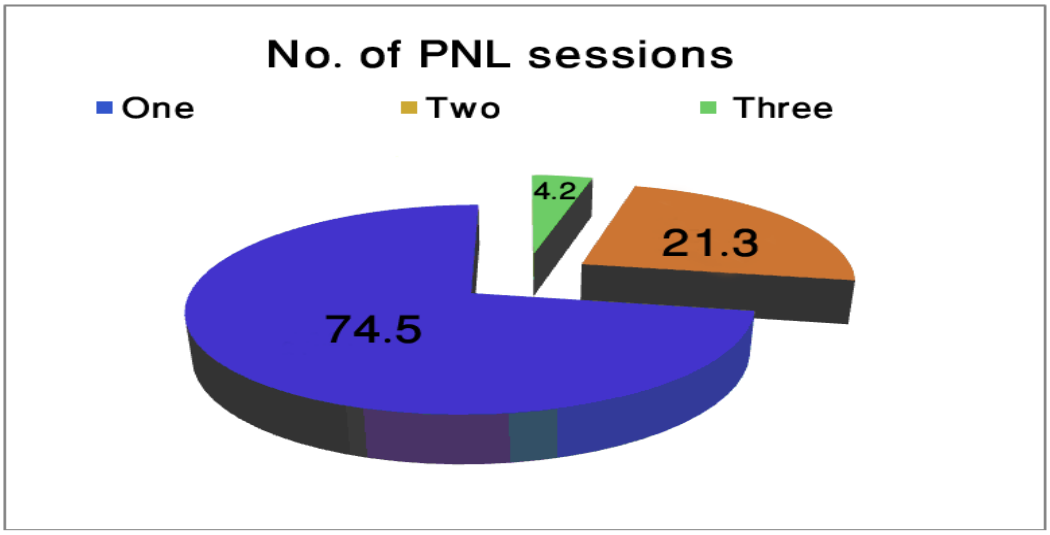

Table (6): Intraoperative Complications.

Data	Number	Percent
***Intraoperative complications*:**		
Dilatation difficulties	5	10.6
Bleeding Requiring transfusion	2	4.2
Bleeding Requiring termination of the procedure	1	2.1
Perforation of PCS	1	2.1
Perinephric collection	2	4.2
Visceral injury	0	0
Total	11	23.4

This table shows the intraoperative complications (total of 11 cases, 23.4%); dilatation difficulties were found in 5 cases (10.6%), bleeding requiring transfusion in 2 cases (4.2%), Bleeding Requiring termination of the procedure in 1 case (2.1%). perforation in 2 cases (4.2%), Perinephric collection in 2 cases (4.2%) and visceral injury did not occur in any of the studied cases.

Fig. (58): Intraoperative complications (%)

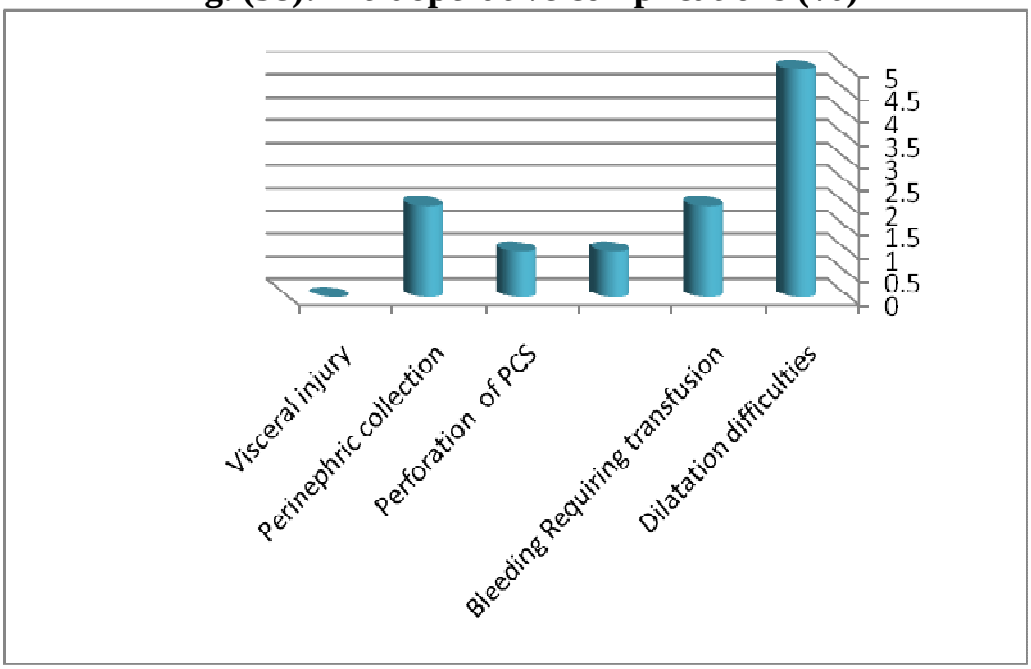

Table (7): Postoperative Data.

Data	Number	Percent
Stone outcome:		
Complete clearance in one session	32	68
Complete clearance in two sessions	5	10.6
Complete clearance in three sessions	3	6.3
Clearance rate after PCNL (total)	40	84.9
Residual > 4mm	7	14.8
Auxiliary Procedures:		
Observation	1	2.1
DJ insertion	2	4.2
ESWL	3	6.3
Post ESWL PNL	1	2.1
Hospital stay (in days):	(Range: 2-12 days)with mean 4 days	

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This table shows the postoperative data of the studied cases; Complete clearance in one session was 68.1% (32 cases), Complete clearance in two sessions in 5 cases (10.6%), Complete clearance in three sessions 3 cases (6.4%). Total clearance rate after PCNL was in 40 cases (85.1%). As for auxiliary procedures observation for 1case (2.1%), DJ insertion was used in 2 cases (4.2%), ESWL was used in 3 cases (6.3%) and post ESWL PNL in 1 case (2.1%). Hospital stay ranged from 2-12 days with mean 4 days.

Fig. (59): Stone outcome

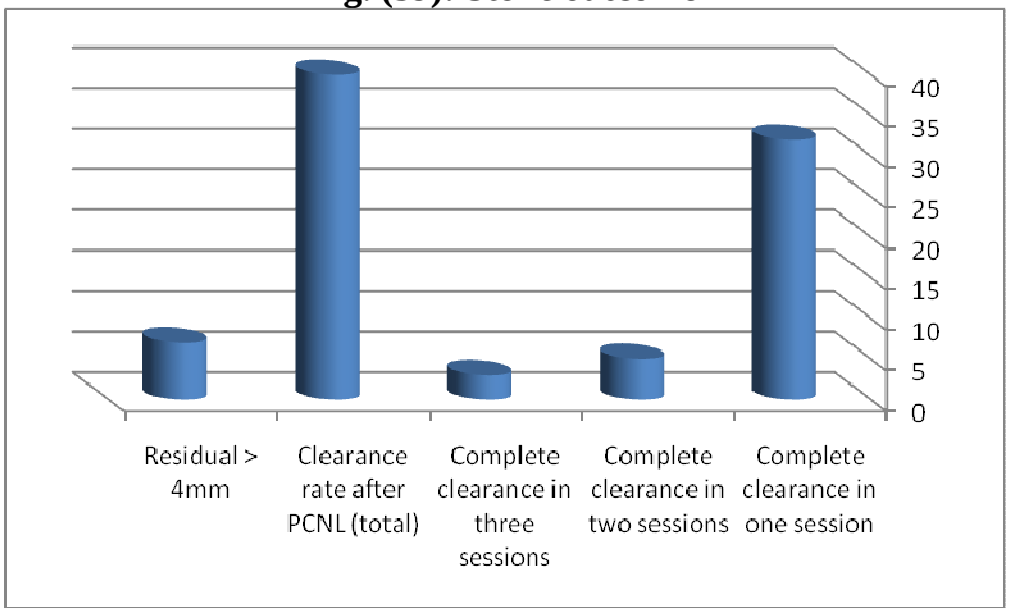

Fig. (60): Auxiliary Procedures (%)

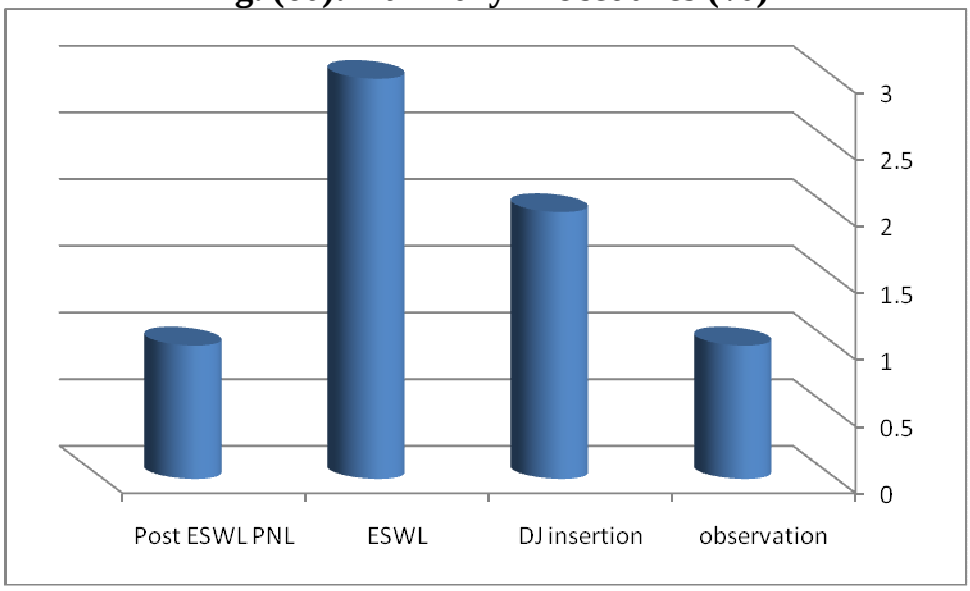

Table (8): Postoperative complications

Data	Number	Percent
Bleeding required blood transfusion	2	4.2
Fever (>38)	3	6.4
Pleural injury (Hydrothorax)	6	12.8
Calyceal segmental aneurysm	1	2.1
Prolonged urinary leakage	2	4.2
Total	14	29.7

This table shows postoperative complications (total 14 cases, 29.7%); bleeding required blood transfusion 2 case (4.2%), fever in 3 case (6.4%),pleural injury(Hydrothorax) in 6 cases (12.8%), clypeal segmental aneurysm in I case (2.1%), and prolonged urinary leakage in 2 cases (4.2%).

Table (9): Effect on Hemoglobin (gm) and Haematocrite

Preoperative			Postoperative		
Hb Preoperative	Hct Preoperative	P value	Hb Postoperative	Hct Postoperative	P value
11.3±0.95	32.7±1.9	0. 03	10.8±2.3	31.2±3.25	0.003

This table shows the effect of the procedure on hemoglobin (gm) and haematocrite%; which shows week significant difference between pre and post-operative hemoglobin and highly significant difference of pre and post operative haematocrite value.

Fig.(61): Pre and Postoperative Hb(gm) & Hct(%).