Presentation On

Comparative study on the cost of older & newer surgical approach in urological care

Guided By

Ms Kirti Udayai

Dissertation Organization

Sanjevani Hospital, Guwahati

Presented By

Sandhyamika Devi

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Background

- The advent of technologies(newer surgical approach) has made the urological treatments more expensive.
- Various instruments used in the diagnostics,treatments & management of urological cases. Main instruments are laparoscope,ureteroscope,cystoscope,endoscopes etc.

Rationale

Urology is one of the surgical specialty in the field of medicine where maximum instrumentations are required & as a result the operations becoming more minimally invasive and costlier. So it is required to analyze the increasing cost of urological surgeries.

REVIEW OF LITERATURE

Initial comparison of robotic-assisted laparoscopic versus open pyeloplasty in children (Yee DS et al, 2006)

Take away points:

- Robotic pyeloplasty is more expensive,
- Has a lower (although non-significant) rate of complications.
- A significantly shorter length of stay.
- Charges for OR and anaesthesia time, costlier instruments dominate the cost difference.

So, efforts to reduce these specific costs should be the focus of future cost-containment efforts.

REVIEW OF LITERATURE

Compared 45 laparoscopic cystectomies with 65 open cystectomies (Wei Zheng et al Guillotreau et al,2012)

Take away points:

- Laparoscopic cystectomy can reduce intraoperative blood loss significantly.
- Open cystectomy requires less operative time.
- Open cystectomy has a lower cost than laparoscopic cystectomy for bladder cancer.
- There was no statistically significant difference in postoperative complication rates in the hospital between the two groups.

REVIEW OF LITERATURE

Single Institutional Cost Analysis of 325 Robotic, Laparoscopic, and Open Partial Nephrectomies (Humberto Laydner et al).

Take away points:

- RPN had higher operating room costs than LPN and OPN.
- Primarily due to instrumentation and supplies.
- Higher cost was offset by decreased cost of hospitalization in compared with the OPN group.

So, modification of practices aimed at lowering RPN instrumentation and supply costs may enable cost equivalence.

Objectives

General Objectives:-

- To compare the cost of older surgical approach & newer surgical approach in urological care.

Specific Objectives:-

- To compare the cost of procedures with respect to the older surgical approach & newer surgical approach.
- To assess the average length of stay.
- To analyze the operating time between the two approach.
- To evaluate the no of post op complication performed by the two different surgical approach.

Methodology

Study Design:- Comparative study.

Study Population :- No of surgeries done between 2008 to 2018 (A total of 109 surgeries,60 surgeries with newer surgical approach & 49 surgeries done with older surgical approach).

Study Location :- Sanjevani Hospital,Guwahati.

Study Duration:- Feb 2018 to April 2018.

Study Variables :- Charge of procedures, POC(post of complication),OT(operating time),LOS (Length of stay).

Sources of Information

Data Collection Method

Secondary Data from

- Review of patient's record.
- Review of Inpatient record maintained at hospital.


Findings

Table: - 1.1

Cost of procedures

Procedures	Older surgical Approach	Newer Surgical Approach	Difference between the approach
Pyeloplasty	40000	110000	40000
Cystectomy	140000	150000	10000
Lap Ureterolithotomy/URSL	60000	85000	25000
Open surgery/RIRS (for ureteric stone)	50000	115000	65000
TURP/Thulep (for BPH)	60000	120000	60000
ESWL/RIRS (for kidney stone)	25000	120000	95000
Open Pyelolithotomy /PCNL (for kidney stone)	50000	80000	30000

Highest cost difference 95000/-(ESWL/RIRS) & Lowest cost difference 10000/-(cystectomy)

Table: - 2.1

Length of stay(LOS)			
Procedures	**Older surgical Approach**	**Newer Surgical Approach**	**Difference between the approach**
Pyeloplasty	4	3	1
Cystectomy	3	2	1
Lap Ureterolithotomy/URSL	3	3	0
Open surgery/RIRS (for ureteric stone)	5	1	4
TURP/Thulep(for BPH)	4	0	4
ESWL/RIRS (for kidney stone)	2	0	2
Open Pyelolithotomy/PCNL (for kidney stone)	5	0	5

Length of stay 5 days of open pyelolithotomy whereas o length of stay for PCNL procedure.(5/0)

Table: - 3.1

OT(operating time)			
Procedures	**Older surgical Approach**	**Newer Surgical Approach**	**Difference between the approach**
Pyeloplasty	105	140	35
Cystectomy	360	400	40
Lap Ureterolithotomy/URSL	50	55	5
Open surgery/RIRS (for ureteric stone)	95	200	105
TURP/Thulep(for BPH)	70	100	30
ESWL/RIRS (for kidney stone)	60	120	60
Open Pyelolithotomy/PCNL(for kidney stone)	80	130	50

Operating time is high in respect of newer surgical approach than open surgery.

Table: - 4.1

Post op Complication			
Procedures	**Older surgical Approach**	**Newer Surgical Approach**	**Difference between the approach**
Pyeloplasty	2	1	1
Cystectomy	3	1	2
Lap Ureterolithotomy/URSL	2	2	0
Open surgery/RIRS (for ureteric stone)	4	1	3
TURP/Thulep(for BPH)	3	0	3
ESWL/RIRS (for kidney stone)	2	1	1
Open Pyelolithotomy/PCNL(for kidney stone)	2	1	1

There is no difference between open ureterolithotomy and URSL(2/2).But vast difference between Open surgery/RIRS(4/1) & TURP/Thulep (3/0).

Table: - 6.1

P value of study variables between two approach

Study Variables	P value
Cost	0.004
LOS	0.01
OT	0.007
POC	0.01

- All the variables are statistically significant (<p value) between the older surgical approach and newer surgical approach.(table 6.1)

Conclusion

- Newer surgical approach is more expensive than open surgery due to instrumentation .
- This cost difference may be due to more operative time, advanced and sophisticated instruments, equipments and supply costs since most of the time equipments, instruments are imported from abroad.
- Despite of higher costs the advanced urology treatment has great impact in healthcare in terms of post op complication ,operative time and length of stay which helps to bring quality of life of the patients.

Thanks