



Introduction of robotic surgery in Gynecologic Oncology: a tunisian experience

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A photograph of a traditional building with blue and white facades. The building features a balcony with a man standing on it, and a woman standing on a set of stairs in the foreground. The scene is set in a sunny, outdoor environment.

INTRODUCTION

- Minimally invasive surgery includes *Laparoscopy* (the first type of minimally invasive surgery) and *Robot-assisted surgery*

INTRODUCTION

- Advantages of **Minimally invasive surgery (MIS)**
 - shorter hospital stays
 - less pain
 - fewer complications
 - better cosmetic results
 - improved quality of life
 - quicker return to daily functions and the workforce

HISTORY

- In 1901, *Kelling de Dresde*, first time using gaz in a dog abdomen
- In 1911, *Jacobeus*, from Sweden, started the experience in human and called it laparoscopy
- In 1970, *K Semm* from Germany first adnexectomies and created a company of endoscopic equipmqt
- In 1972, *P. Mouret* from France Lyon first appendicectomies
- 1987, *P. Mouret* first cholecystectomies
- 1988, *H. Reich* from USA first hysterecomy



HISTORY



A tropical resort scene with palm trees, a swimming pool, and thatched-roof buildings. The background is a clear blue sky. In the foreground, there is a swimming pool with a large rock in the water. The overall scene is bright and sunny.

INTRODUCTION

➤ ***Robot-Assisted Surgery*** includes types of surgical procedures that are done using robotic systems



INTRODUCTION

➔ There were many types of robots since 1985

PUMA 260

SCARA

ROBOCOD

ZEUS

.....



INTRODUCTION

➤ Advantages of **Robotic Surgery**

- high-definition three-dimensional field of vision
- instruments with wrist-like range of motion
- better ergonomics
- faster learning curve

TUNISIAN EXPERIENCE



SENHANCE



DAVINCI

TUNISIAN EXPERIENCE



TUNISIAN EXPERIENCE



TUNISIAN EXPERIENCE

Negative response
No logical explanation





TUNISIAN EXPERIENCE : SENHANCE Surgical Robotic System

- In March 2019, our Surgical Department acquired the Senhance™ Surgical Robotic System (TransEnterix, Morrisville NC, USA).

TUNISIAN EXPERIENCE : SENHANCE Surgical Robotic System



TECHNICAL CHARACTERISTICS

Device	DaVinci	Senhance
Console	Closed	open
optics	8mm3DHD	10mm 3DHD
Instruments with articulations	bipolar/ monopolar	bipolar/needle holder
haptic feedback	no	yes
Optic control	hand+foot pedal	pupil tracking
Instruments size	8 mm	5mm/10mm
Approvals	Worldwide	FDA for colorecta and Gyn CE for all lap procedures

TECHNICAL CHARACTERISTICS

Device	DaVinci	Senhance
Cost of Device	\$ 2Millions	\$ 2Millions
Cost per use	1500 \$	200\$
Reusability	ten uses	no restriction

TECHNICAL CHARACTERISTICS

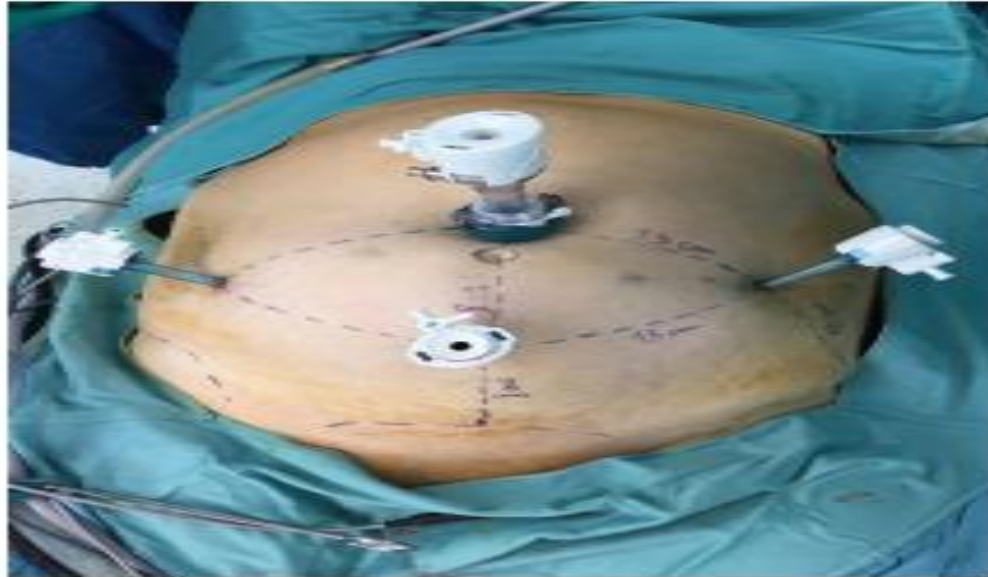


Fig. 1 Trocar position setting in obese patients

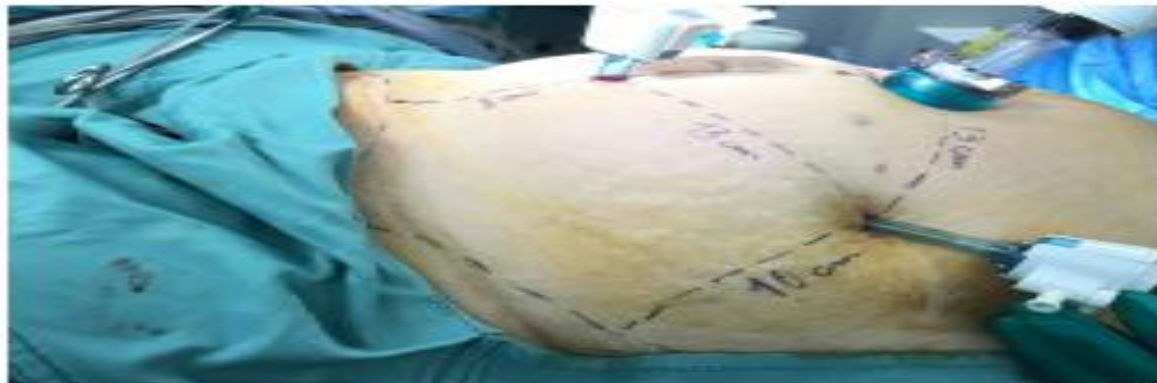


Fig. 2 Trocar position setting and distance measures in obese

TUNISIAN EXPERIENCE : SENHANCE

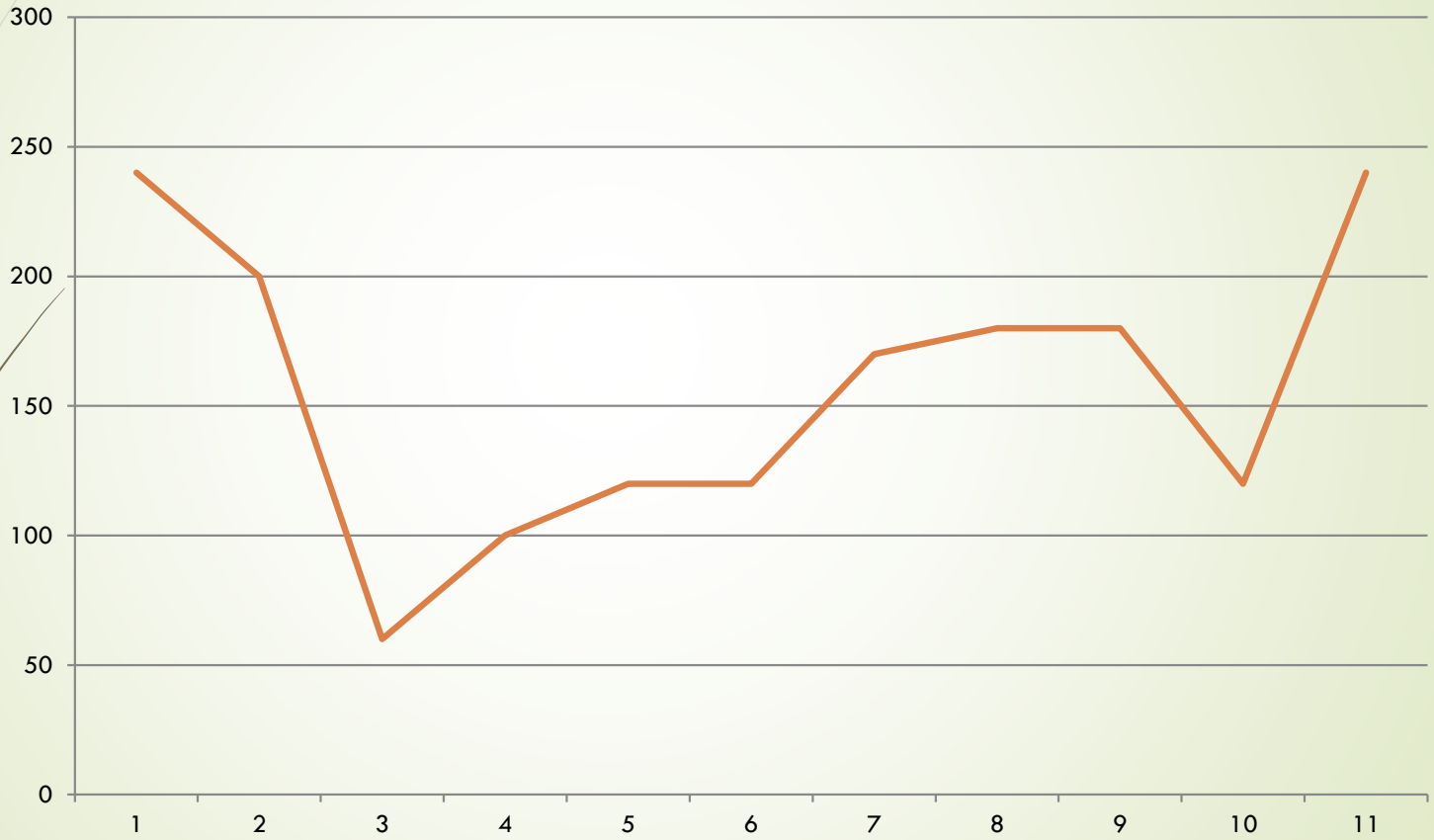
- Since March 2019, 11 procedures had been performed at our surgical department with the Senhance™ Surgical Robotic System
- The mean age was 55 (33-75)
- The mean BMI was 27.5 (20.3-38.7)
- Oophorectomy, Hysterectomy...

Patients Charateristics	Age	BMI	Pathology	Procedure	trocars
Case 1	43	20,3	Breast cancer	Oophorectomy	3trocars
Case 2	41	25,4	Breast cancer	Oophorectomy	3trocars
Case 3	45	36,3	Breast cancer	Oophorectomy	3trocars
Case 4	42	25,3	Breast cancer	Oophorectomy	3trocars
Case 5	50	38,7	Ovarian mass	Adenexectomy	3trocars

Patients Charateristics	Age	BMI	Pathology	Procedure	Trocars
Case 6	62	21.5	Uterine mass in IRM	Hysterectomy	4 trocars
Case 7	64	24.4	Endometrial hyperplasia	Hysterectomy	4 trocars
Case 8	55	23	Endometrial cancer	Hysterectomy+ Pelvic lymphadenectomy	4 trocars
Case 9	69	25.5	Endometrial cancer	Hysterectomy+ pelvic lymphadenectomy	4 trocars
Case 10	75	36.1	Endometrial hyperplasia	Hysterectomy	4 trocars
Case 11	67	27	Cervical cancer IB1	Radical hysterectomy	4 trocars

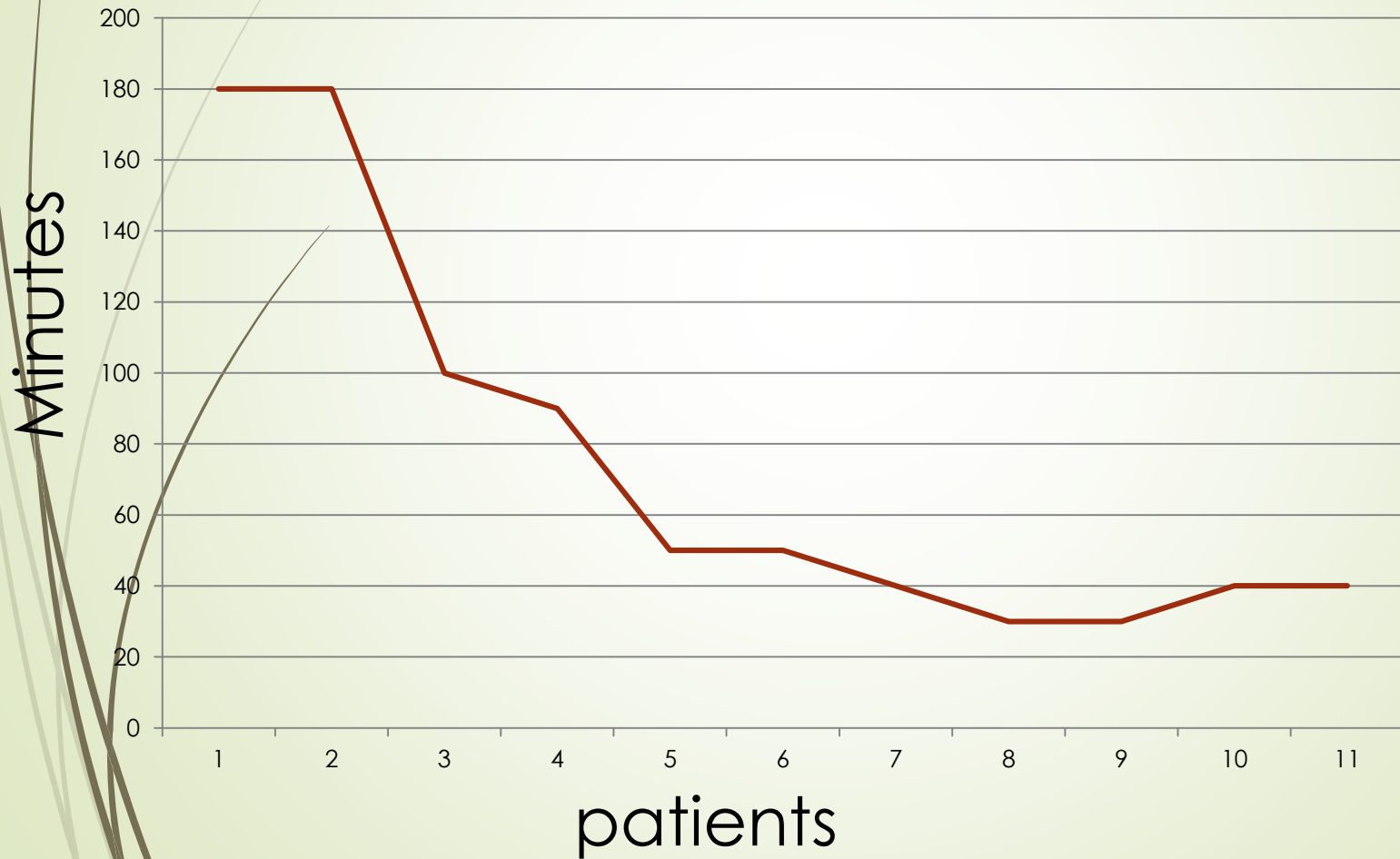
OPERATIVE TIME

Minutes



patients

DOCKING TIME







Peri-operative data

No. of patients	11
Docking time (min), median (range)	75 (30–180)
OperativeTime (min), median (range)	157 (60–240)
EBL (mL), media (range)	100 (50–200)
Duration of ileus (h), median (range)	17 (12–36)
Conversion, N (%)	
Laparoscopy	1
Laparotomy	0
Intraoperative complications, N (%)	1
Length of stay (day)	2 (1-10)

Postoperative Morbidity

Post operative complication	Cases
Characteristic heamorrhage	1
urtere injury	1
Classification Clavien- Dindo IIIB	2
Mortality	0

Visual Analog Scale (VAS)

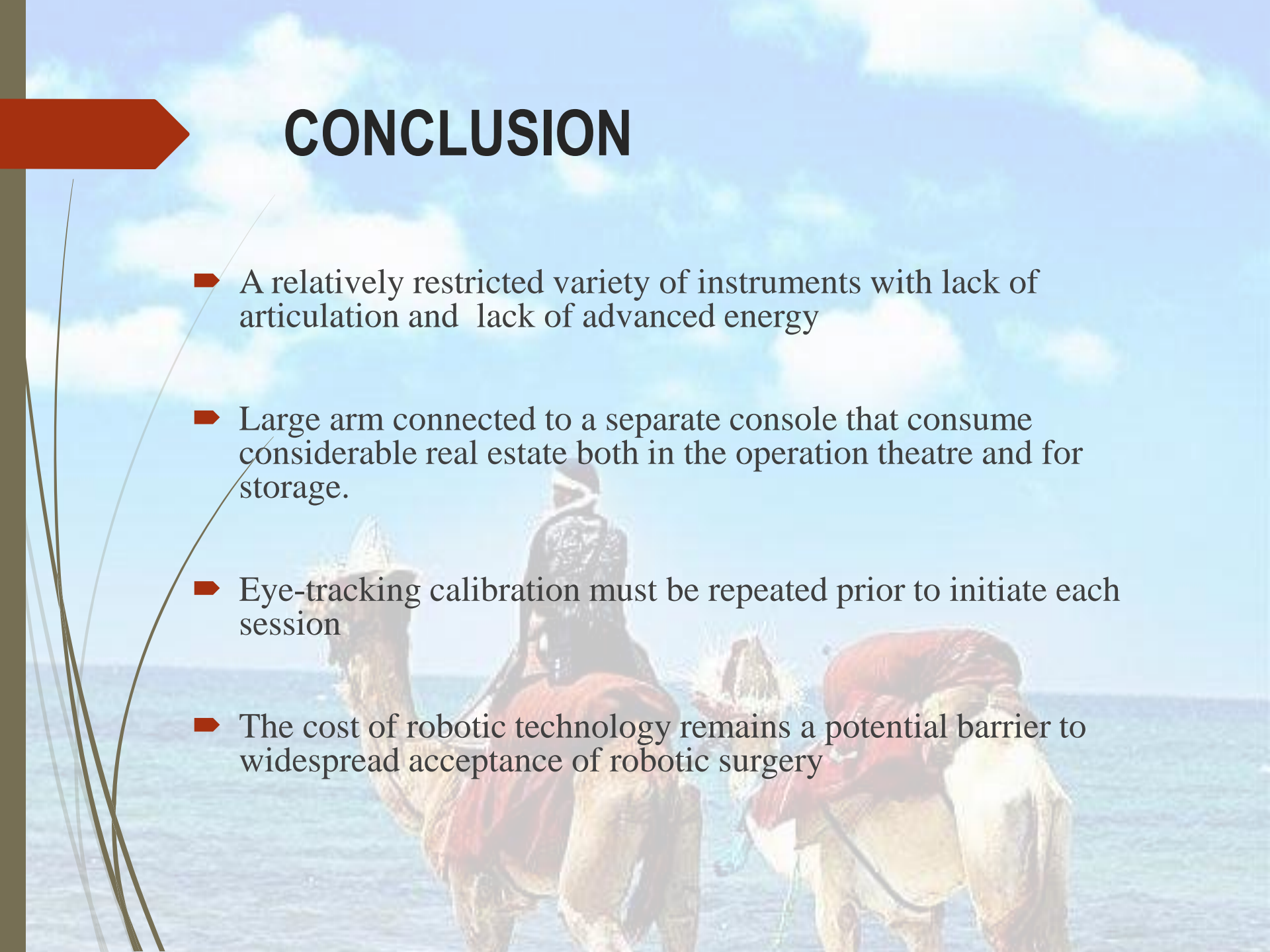
Extent of pain VAS	1st day after surgery n° of patients	7 days after surgery N° of patients
No pain (0)	5	11
1-3	5	0
4-7	0	0
8-9	1	0
Worst pain imaginable (8-10)	0	0

Demonstration





CONCLUSION

- A relatively restricted variety of instruments with lack of articulation and lack of advanced energy
 - Large arm connected to a separate console that consume considerable real estate both in the operation theatre and for storage.
 - Eye-tracking calibration must be repeated prior to initiate each session
 - The cost of robotic technology remains a potential barrier to widespread acceptance of robotic surgery
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THANK YOU FOR YOUR ATTENTION