

RADICAL HYSTERECTOMY IN **ROBOTIC SURGERY**

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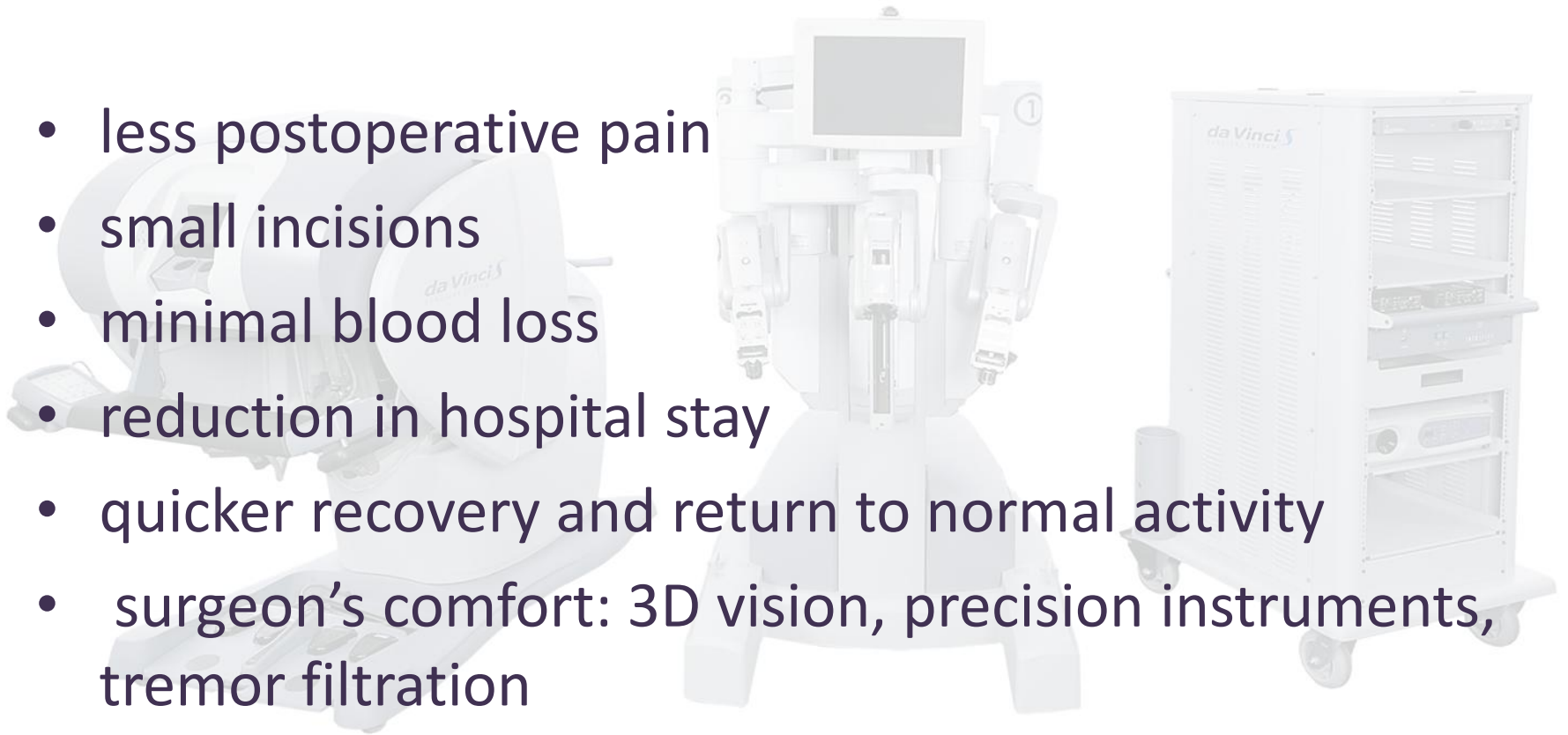
4th Annual SERGS Meeting
on Robotic Gynaecological Surgery
&
3rd French Annual Meeting
of the French Speaking Group in Robotic Gynaecological Surgery

June 13 - 15, 2012

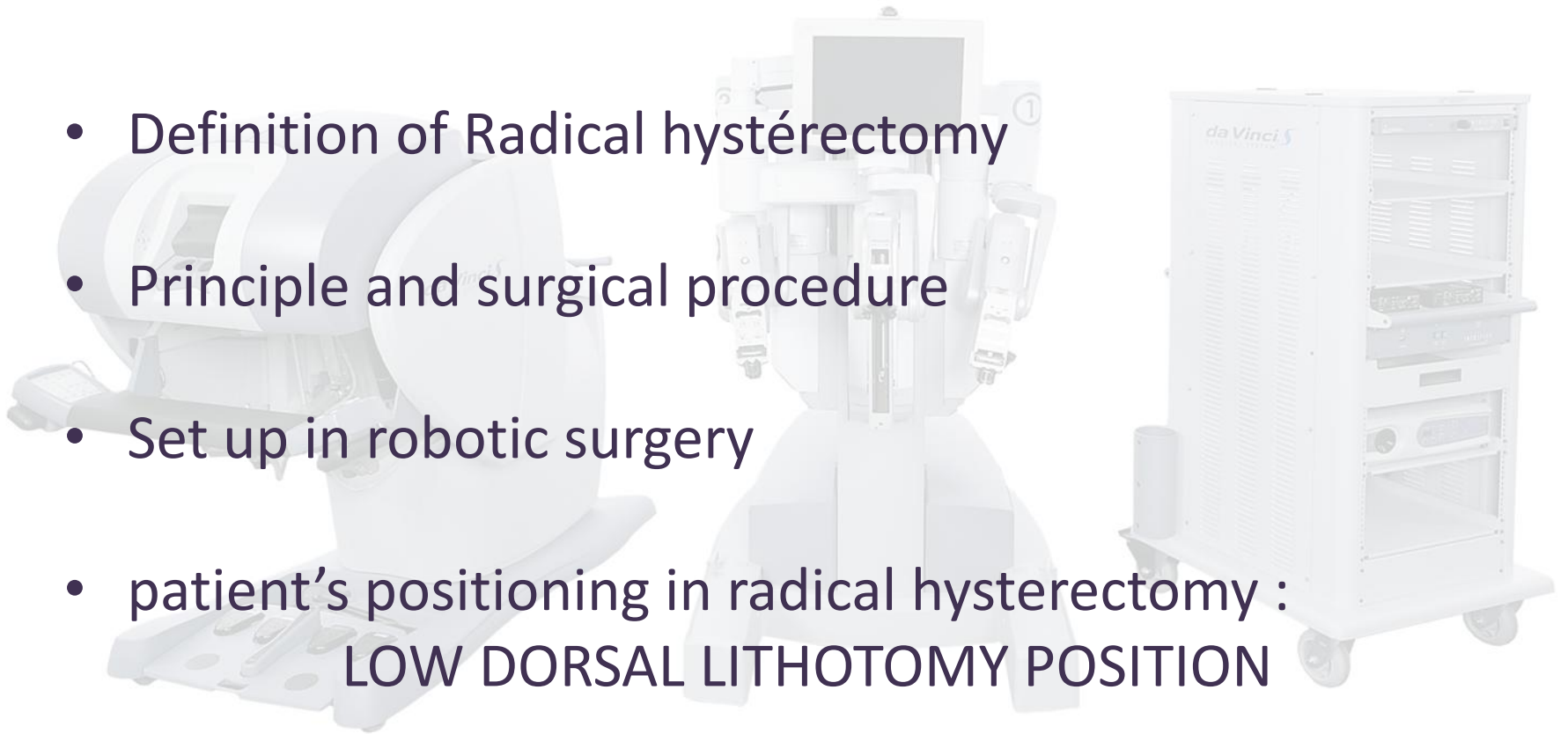
Cercle Militaire de Garnison, Marseille, France

More and more centers across the US and Europe are investing in robotic devices :

- less postoperative pain
- small incisions
- minimal blood loss
- reduction in hospital stay
- quicker recovery and return to normal activity
- surgeon's comfort: 3D vision, precision instruments, tremor filtration
- Better clinical outcomes and patient satisfaction in many cases



- Definition of Radical hystérectomy
- Principle and surgical procedure
- Set up in robotic surgery
- patient's positioning in radical hysterectomy :
LOW DORSAL LITHOTOMY POSITION
- Robot positionning and Side docking



DEFINITION OF RADICAL HYSTERCTOMY

Surgical removal of the utérus, cervix, upper vagina, ovaries, oviducts and related lymph nodes.



PRINCIPLE OF RADICAL HYSTERECTOMY

Once five ports have been placed in the patient's abdomen using quarter-inch incisions, the surgeon begins by dissecting the spaces inside the pelvis to define the operating field.

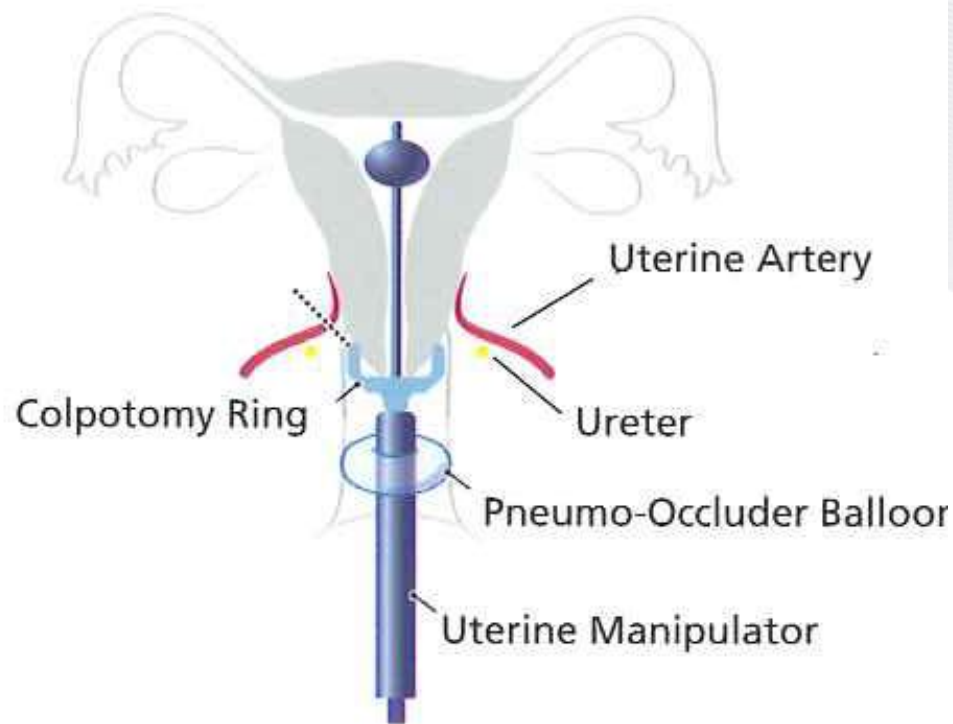
Next, the bladder is moved away from the uterus, cervix and upper vagina, and the uterine artery is tied off and cut at its origin from the internal iliac.

The rectovaginal space is opened by incising the peritoneum and the uterosacral ligaments are resected.

Finally the upper vagina is excised and the uterus, cervix, both parametria, the uretral sacral ligaments and upper vagina are all removed en bloc (together) through the vagina, after which the remaining vagina is sutured shut.

SURGICAL PROCEDURE

- The uterine manipulator is placed. (without the probe into the uterus because there is a risk of spread of cancer cells)



SURGICAL PROCEDURE

- The pelvis and abdomen are explored to rule out intraperitoneal disease.
- The round ligaments are transected bilaterally.
- The ureter is identified.
- The lymph-bearing tissue along the pelvis is then evaluated for obvious metastatic disease. Any suspicious pelvic lymph nodes are removed and sent for frozen-section examination.
- If these are positive for metastatic disease, the procedure is aborted.

SURGICAL PROCEDURE

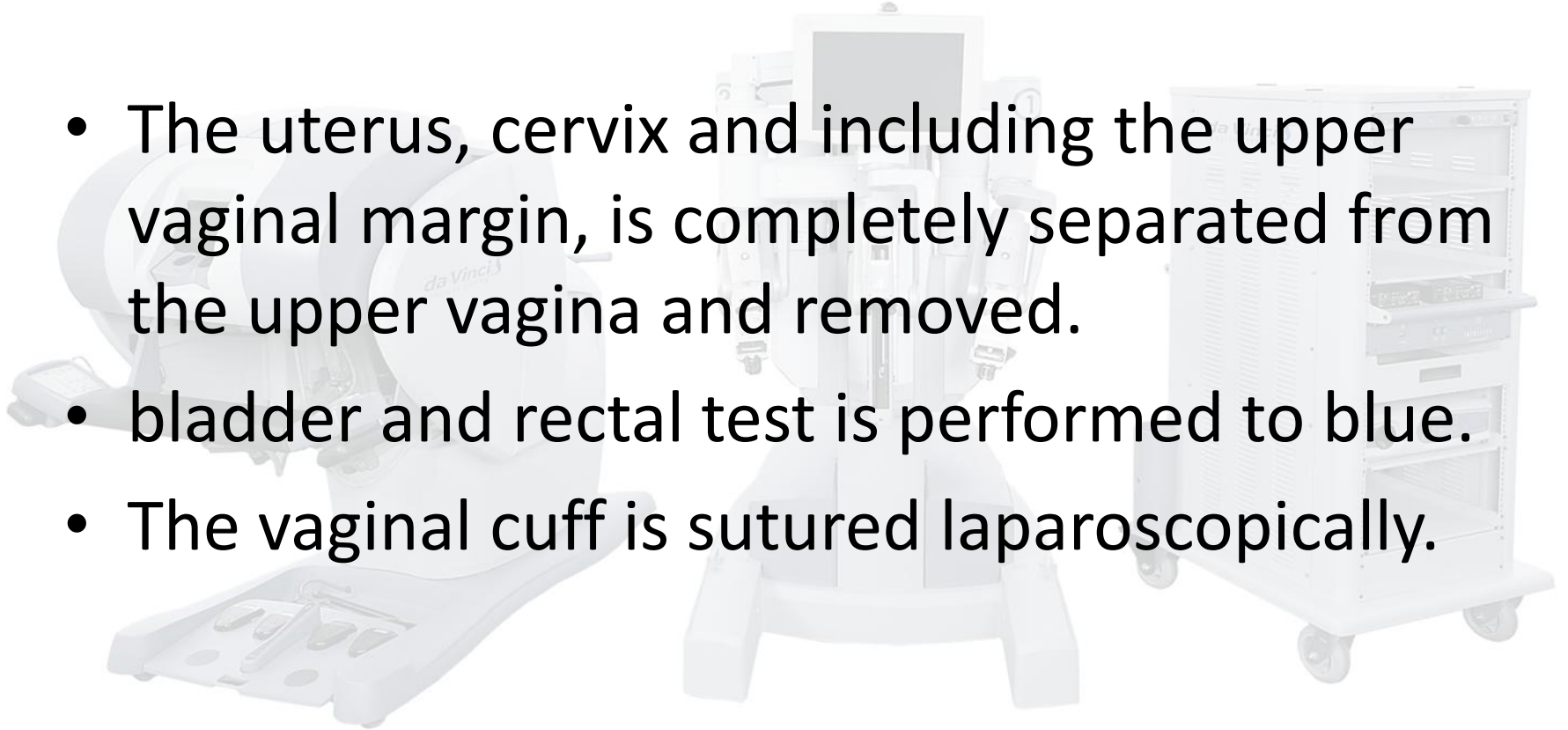
- The paravesical and pararectal spaces are opened and exposed.
- The uterine artery and vein are identified and transected at the point of origin from the internal iliac vessels.
- The bladder is mobilized inferiorly.
- The lateral aspect of the vesicouterine ligament is then divided, and the bladder is mobilized further inferiorly to ensure adequate vaginal margins.

SURGICAL PROCEDURE

- The infundibulopelvic ligaments are transected bilaterally.
- The uterus is anteflexed, and the peritoneum overlying the interface between the rectum and posterior vagina is then incised, exposing the recto-vaginal space.
- The attachments between the rectum and the vagina are cut in the midline, exposing the uterosacral ligaments, which are then transected.

SURGICAL PROCEDURE

- The uterus, cervix and including the upper vaginal margin, is completely separated from the upper vagina and removed.
- bladder and rectal test is performed to blue.
- The vaginal cuff is sutured laparoscopically.



SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY

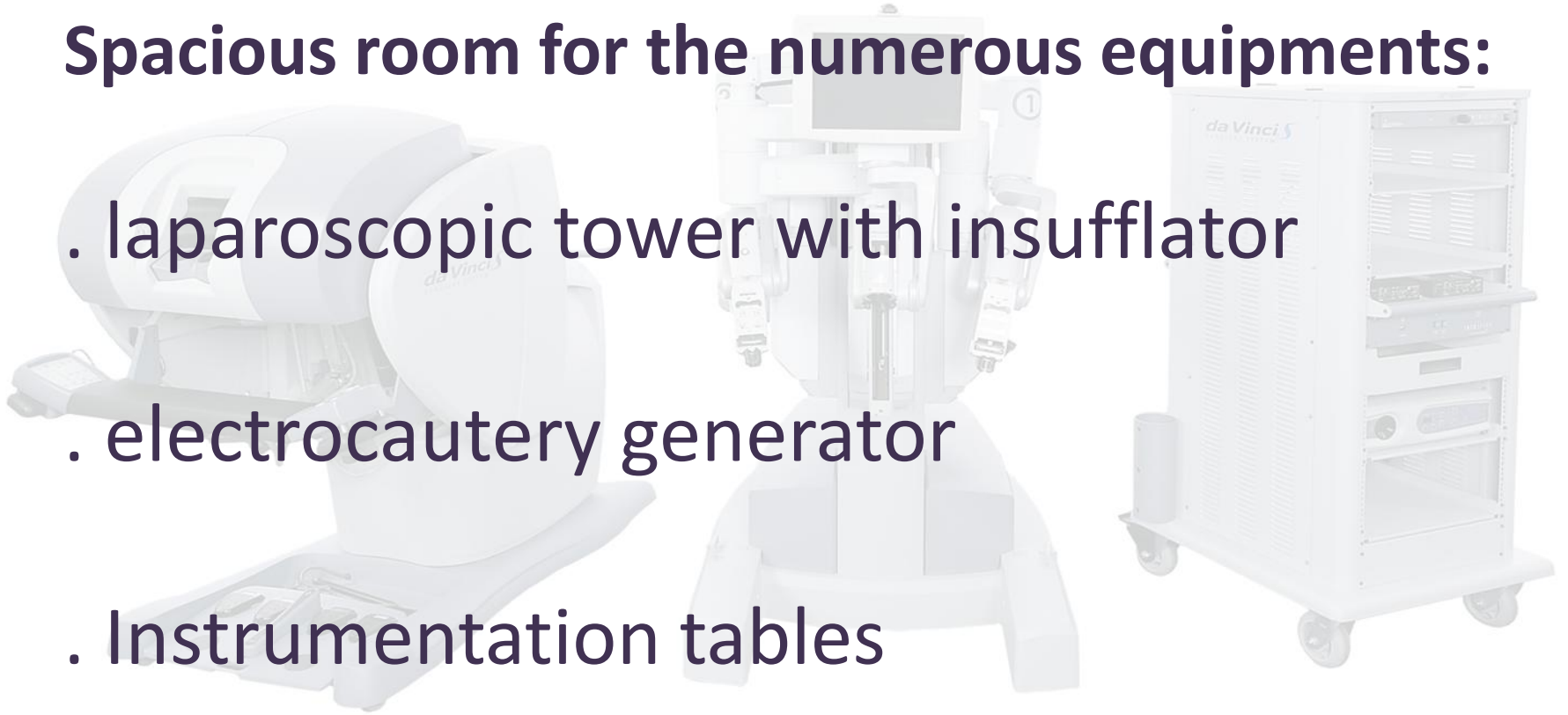
An effective set up and organized operating room for pelvic robotic surgery is critical for success



SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY

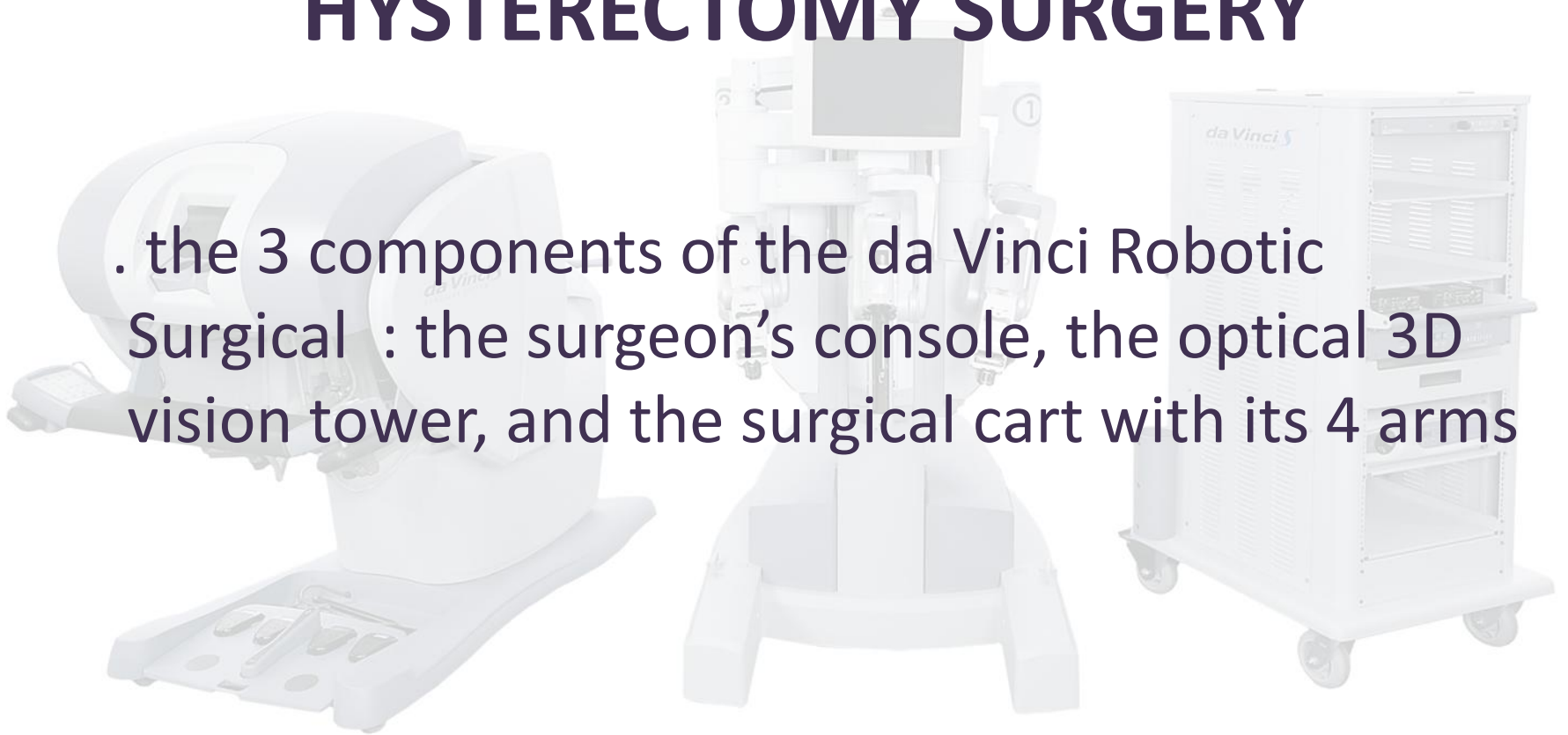
Spacious room for the numerous equipments:

- . laparoscopic tower with insufflator
- . electrocautery generator
- . Instrumentation tables



SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY

. the 3 components of the da Vinci Robotic Surgical : the surgeon's console, the optical 3D vision tower, and the surgical cart with its 4 arms



SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY



SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY

In the radical hysterectomy surgery the following Endo Wrist instruments were used :

- The **Monopolar Curved Scissors** at the first arm
- The **Maryland Bipolar Forceps** at the second arm
- The **Cadier forceps** at the third arm
- For the vaginal cuff, the monopolar scissors were replaced with the **Large Needle Driver**

SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY



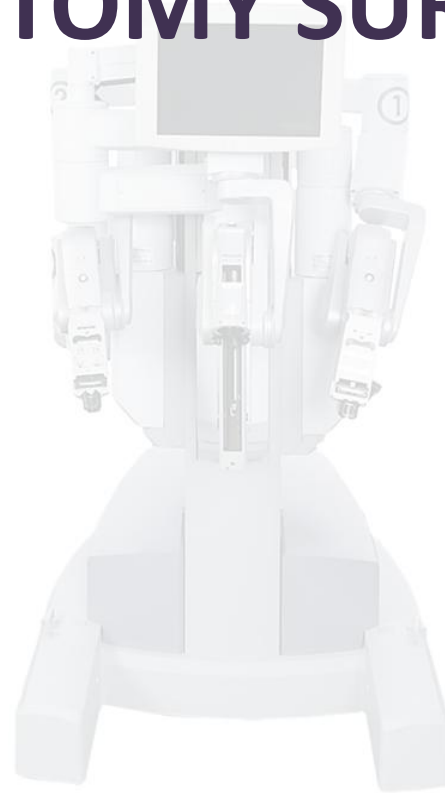
Monopolar Curved Scissors

SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY



Maryland Bipolar Forceps or
Cadier forceps

SET UP IN ROBOTIC RADICAL HYSTERECTOMY SURGERY



Large Needle Driver

PATIENT POSITINING

Patient positioning in robotic radical hysterectomy surgery is:

LOW DORSAL LITHOTOMY POSITION



PATIENT POSITIONING

- Head: placed into a foam pad specially made for robotic surgery and in axis of the trunk, eyes closed and lubricated



PATIENT POSITIONING

- Arms padded and tucked at sides and well secure with several lines
- Autogrippantes straps are crossed across the patient's chest and shoulders in an X formation to secure the patient



PATIENT POSITIONING

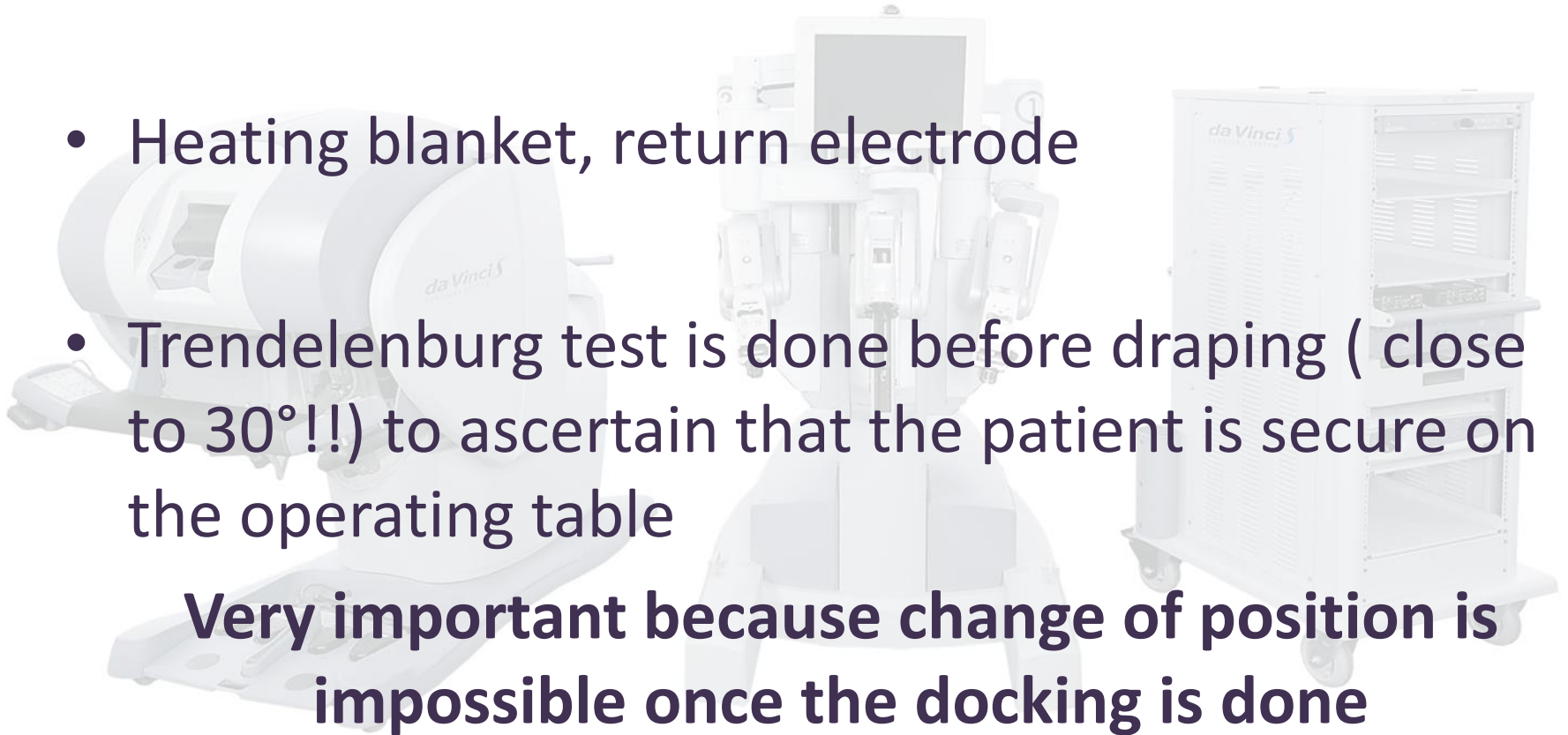
- Legs are placed into padded leg holders (Allen stirrups): symmetrical, relaxed in a mid position



PATIENT POSITIONING

- Heating blanket, return electrode
- Trendelenburg test is done before draping (close to 30°!!) to ascertain that the patient is secure on the operating table

Very important because change of position is impossible once the docking is done



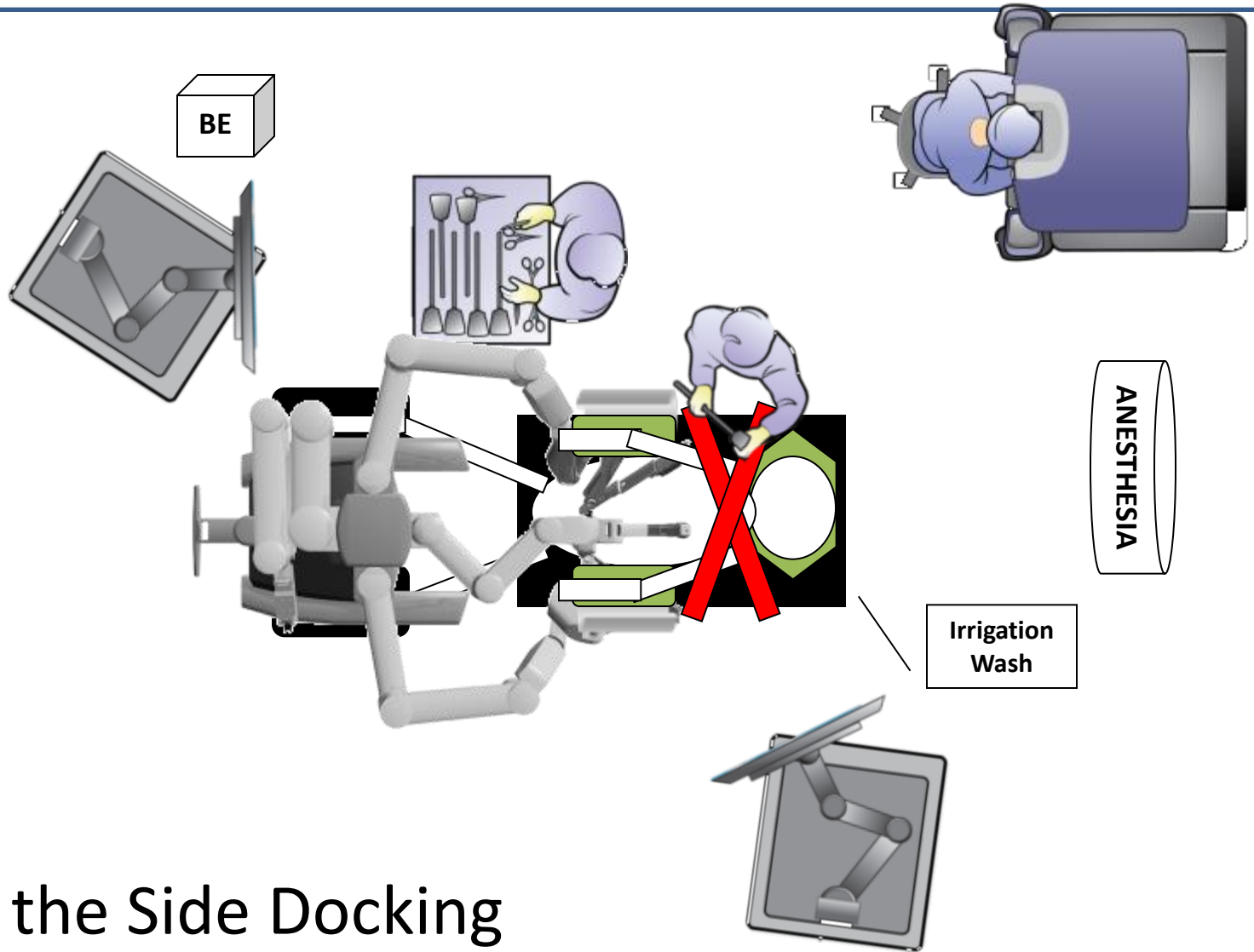
PATIENT POSITIONING



PATIENT POSITIONING

- Most possible injuries:
 - Slide down into the cephalic direction (30° trendelenburg) → foam pad for the head, autogrippantes straps, trendelenburg test
 - Nerve injuries: ulnar nerve, brachial plexus, sciatic nerve, popliteal plexus → gel pads, medical team verification
 - Positive pressure ventilation with CO2 insufflation and high trendelenburg → low insufflation pressure is possible (≤ 10 mmhg)

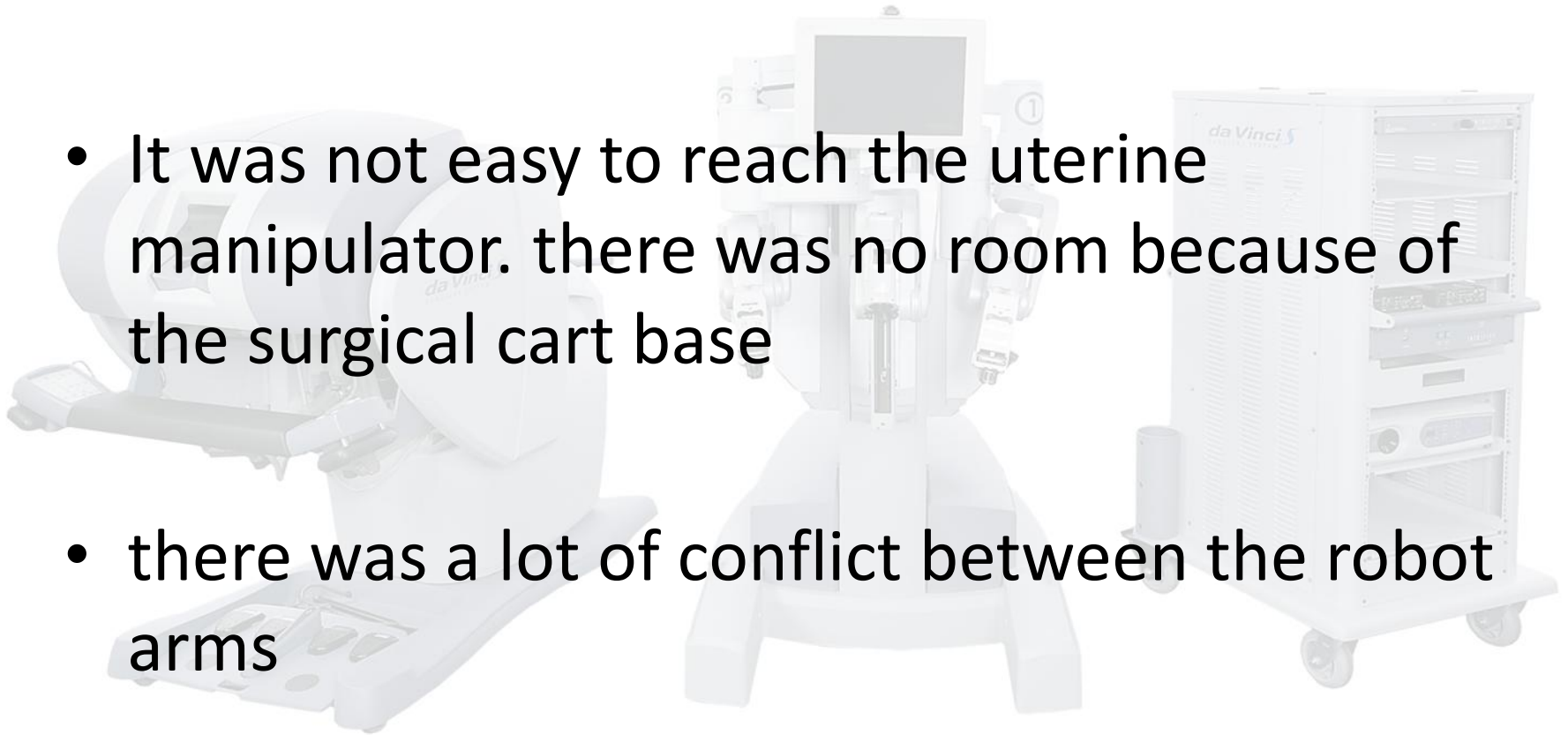
ROBOT POSITIONING



Before the Side Docking

BEFORE THE SIDE DOCKING

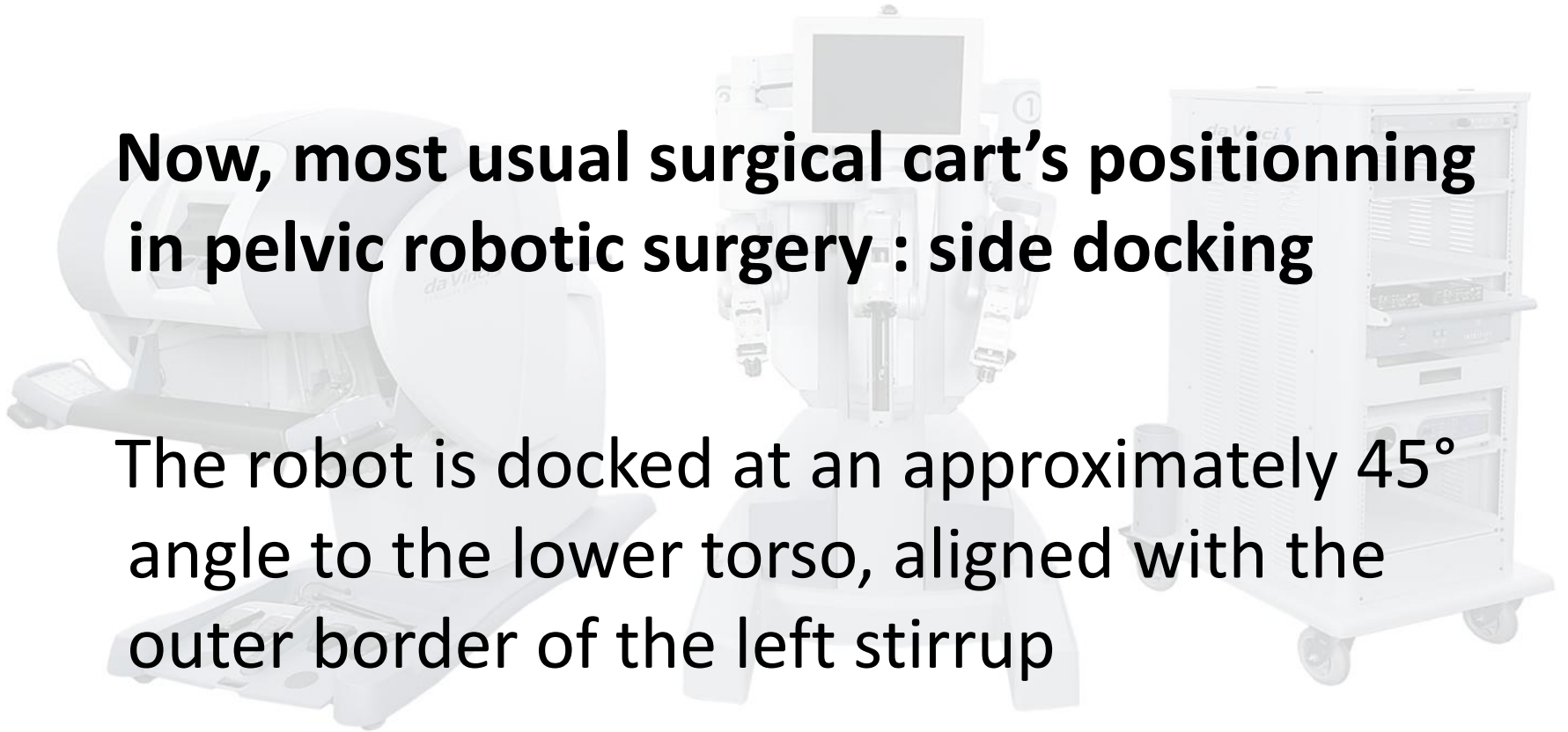
- It was not easy to reach the uterine manipulator. there was no room because of the surgical cart base
- there was a lot of conflict between the robot arms
- We have a better exposure of the pelvis in side docking.



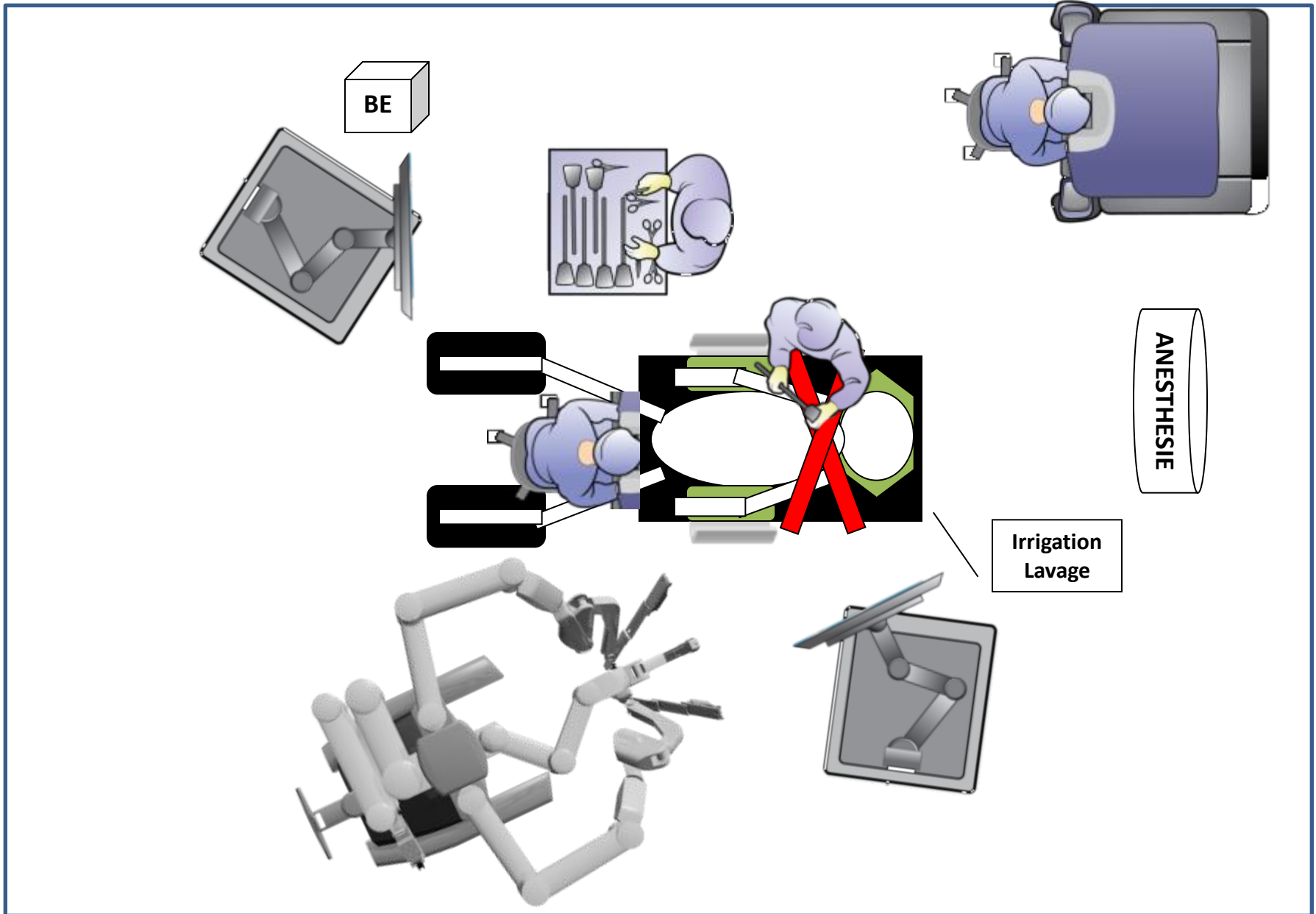
SIDE DOCKING

Now, most usual surgical cart's positioning in pelvic robotic surgery : side docking

The robot is docked at an approximately 45° angle to the lower torso, aligned with the outer border of the left stirrup



SIDE DOCKING

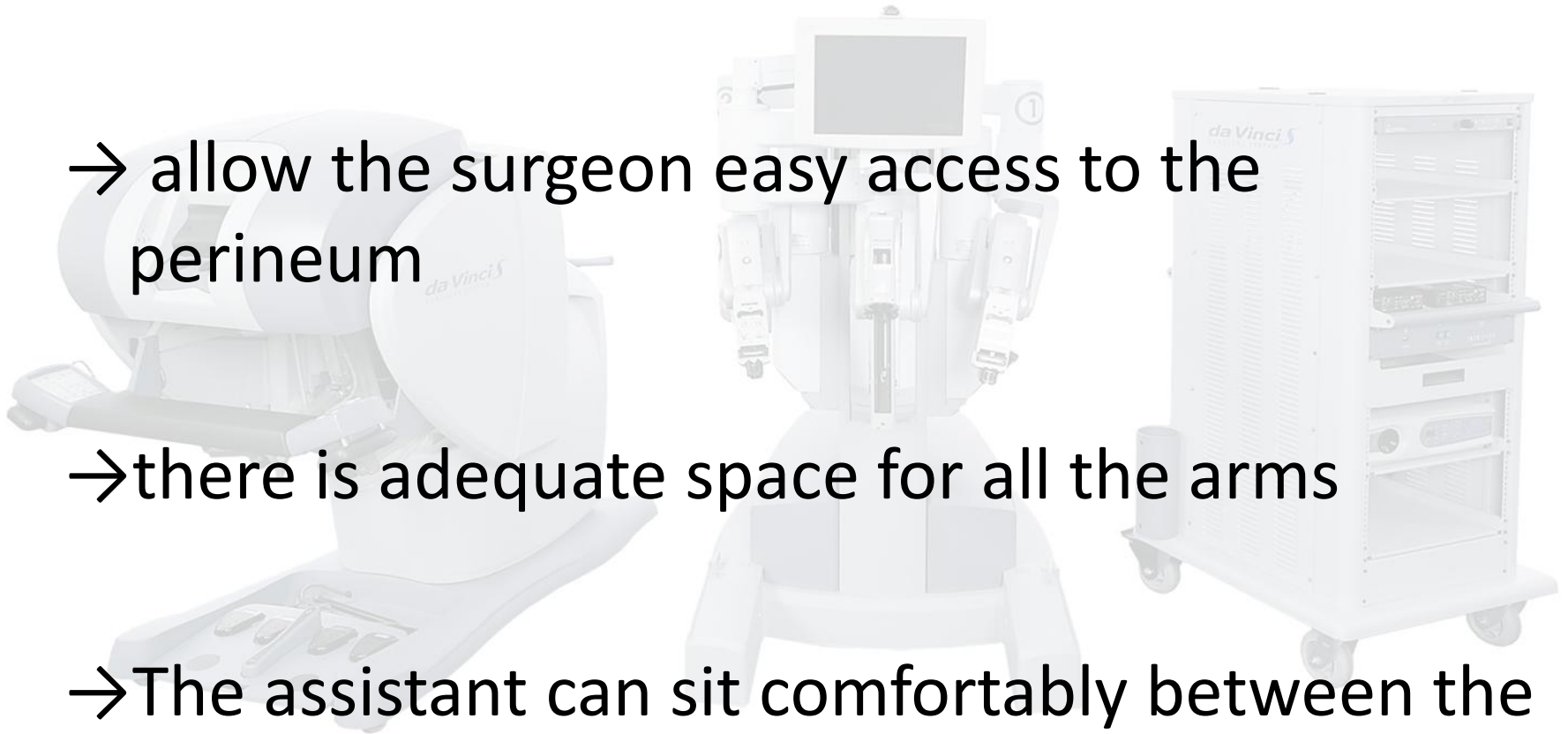


SIDE DOCKING

→ allow the surgeon easy access to the perineum

→ there is adequate space for all the arms

→ The assistant can sit comfortably between the patient's legs with the robot docked at the side of the left leg.





**Thank you for your
attention**

