Introduction:

The latissimus dorsi muscle flap is one of the most commonly used flaps in breast reconstruction. The robotic latissimus dorsi muscle harvest method is introduced by J. C. Selber[1,2] in 2011. This method using carbon dioxide(CO2) insufflation have risks of intraoperative hypothermia and problems associated high thoracic pressure.[3,4] Therefore, we introduce our experiences of robotic-assisted LD muscle flap using the articulated long retractor.

Methods:

Robotic-assisted latissimus dorsi muscle flaps were used in three cases of breast reconstruction. The first case is a delayed reconstruction following an expander-based reconstruction, the other cases are an immediate reconstruction following nipple-sparing mastectomy or correction of chest wall deformity (Poland syndrome). An incision was on previous mastectomy scar and one or two minimal incisions for robotic arm ports. The articulated long retractor (Fig. 1) was utilized as securing the operative field instead of gas insufflation. The subcutaneous dissection within about 10cm from the incision line and the thoracodorsal pedicle isolation was performed by manual methods. And then, the dissection of deep portion was performed by the guidance of robotic surgical system (da Vinci S, Intuitive Surgical, Sunnyvale, Calif.).

Results:

All flaps were successfully harvested without any technical problems. These pedicled muscle flaps were used in combination with anatomic shaped silicone implants. Although all drains were removed within 10 days after surgery, there were no donor site complications and flap problems. Main advantages of this technique are shorter drainage and lower risk of seroma, and consequently shorter recovery time than conventional method. Indeed, all patients discharged by 1 week and had complete recovery by 2 weeks after surgery. Patients were

satisfied with their aesthetic results, especially no visible scar. There was no visible scar on their back, but only a small scar hidden in their axillary area.

Conclusions:

Robotic-assisted latissimus dorsi muscle flap using retractor was safer and less complex technique than previous method. This flap are useful reconstructing any other defects, for example scalp or extrimities, as well as breast reconstruction.

Please include Images if appropriate:

Fig. 1. The articulated long retractor was applied with Robotic surgery system. This simple retractor would have enabled us to perform the robotic surgery without CO2 gas insufflation.

Keyword : Robotic, da Vinci, Latissimus dorsi, Breast reconstruction

References

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