Fine-Tuning Laparoscopic Technique:fertility preservation in a 16-year-old with perineal rhabdomyosarcoma: case report

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INTRODUCTION

Modern oncology saves lives. But it must also strive to protect the quality of those lives. Fertility is a fundamental concern, espeically for young patients facing fertility compromising oncology teratment

Fertility preservation must ideally be addressed, prior to commencing oncology treatment. This must be supported by dedicated MDT input. Established fertility preservation protocols include ovarian suppression, ovarian tissue cryopreservation or oocyte cryopreservation, depending on timelines for start of treatment and also the patient's pubertal status . When medical emergency dictates limited time for fertility preservation strategies or in prepubertal patients, ovarian tissue cryopreservation is a promising option. The cryopreservd ovary could offer a source of oocytes following in vitro maturatation. Alternatively, autologous re-implantation of the cryopreserved ovary is another option which can potentially restore endocrinological and fertility function.

STUDY QUESTION

To strengthen the principles and techniques guiding surgery for fertility preservation , with a view to integrate these into standard care protocols

CASE REPORT

Our index patient was a 16 yo nulliparous girl with a new diagnosis of high-risk fusion-positive perineal rhabdomyosarcoma. Given the clinical urgency to commence radiotherapy, MDT input advised ovarian cryopreservation following laparoscopic unilateral oophorectomy. It was proposed that transposition of the contralateral ovary would be undertaken at the same time.

SURGICAL TECHNIQUE

Laparoscopic access was established using a 12mm supraumbilical port between epigastrium and umbilicus and three 5mm secondary ports (lateral ports, placed higher than normal). An initial pelvic survey revealed a normal uterus and adnexa. Given the rhabdomyosarcoma was left sided, a left oophorectomy was performed , ensuring a 2-3mm rim of ovarian tissue was conserved to maintain primordial follicular viability. The procedure was performed in a timely manner, which ensured minimal loss of primordial follicles and the retrieved ovary was placed in liquid nitrogen ahead of transportation to the cryobank.

Contraleterally, ovarian transposition was performed, to move the ovary out of the field of radiation. This was performed by dissecting the IP ligament at the level of the pelvic brim to mobilise the ovary. Sparing use of electrocautery ensured ovarian vasculature was not compromised. Thereafter the fallopian tube was mobilised and the ovary was pedicled to the level of the pelvic brim, away form the field of irradiation.Blunt dissection of the peritoneal sidewall was performed to create a tunnel into which the ovary was rotated and secured using 2-0 braided polyester non absorbable sutures. LIGACLIPS were placed as radiopaque ovarian markers.

DISCUSSION

In this procedure, the ovary closer to the tumour bulk was retrieved for future cryopreservation as this side would be impacted more from the field of radiation. The contralateral ovary was left in situ but transpositioned to mimise radiation damage and allow preservation of ovarian function

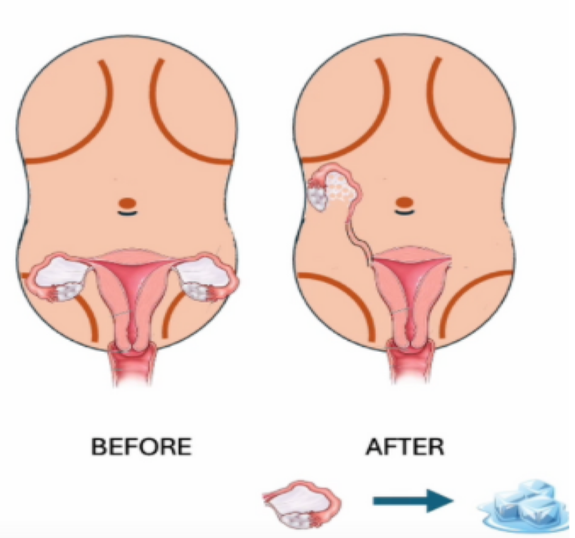
LIMITATIONS/FUTURE RESEARCH

Following transposition of the contralateral ovary, due to scatter effect of radiation, residual ovarian tissue is at risk of necrosis. Also, intraoperatively, ovarian vascular disruption will imapir future ovarian function.

The success of this procedure relies heavily on meticulous surgical technique and co-ordicanted working between medical oncologists and reproductive surgeons

FUNDING/COMPETING INTERESTS

None



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