Fertility preservation in pediatric female cancer patients

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Objective: To describe and demonstrate ovarian tissue cryopreservation (OTC) as an emerging fertility preservation technique
Design: Video presentation.
Setting: University hospital.
Patient(s): A 6 year-old female patient diagnosed with aplastic anemia with plan for bone marrow transplantation underwent laparoscopic unilateral oophorectomy in conjunction with surgical procedure for port placement by the pediatric surgeon, followed by cryopreservation of ovarian tissue.
Intervention(s): Laparoscopic unilateral oophorectomy followed by ovarian decortication in the operating room, and ovarian tissue freezing prior to undergoing bone marrow transplantation.
Main Outcome Measure(s): To present principle surgical techniques of ovarian tissue harvesting prior to OTC in pediatric patients, and different surgical techniques for ovarian auto-transplantation of cryobanked ovarian tissue after completion of gonadotoxic treatment and when the patient is ready to conceive.
Result(s): This video demonstrates the detailed surgical technique for ovarian tissue harvesting. This harvesting can be performed laparoscopically or via mini-laparotomy and can involve a complete oophorectomy versus removing a portion of the ovary (a procedure also known as ovarian decortication).
Conclusion(s): In the prepubertal child, due to the small size of the ovaries, we recommend oophorectomy rather than decortication owing to the small size of prepubertal gonadal tissue. Many young cancer patients can be offered the option of ovarian tissue freezing. This tissue contains immature primordial follicles that can be stored. OTC requires surgical ovarian harvesting followed by cryopreservation of strips of ovarian tissue. The increased number of eggs in prepubertal children underscores the fact that smaller ovarian size in this population does not preclude OTC. At this time, ovarian auto-transplantation is the only option to utilize this stored tissue for fertility preservation. OTC is a relatively new procedure within the area of ART. The overall data from OTC is reassuring and further suggests that cryopreservation of ovarian tissue has the potential to become an established fertility preservation method in the near future. (Fertil Steril® 2018;109:941. ©2018 by American Society for Reproductive Medicine.)

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SUGGESTED READING

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