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Introduction

- Ovarian tissue cryopreservation (OTC) is the **only available fertility preservation method** for prepubertal patients and patients who cannot delay treatment¹
- Research is limited regarding offering OTC** in setting of primary ovarian tumor or ovarian metastasis
- Cryopreserved ovarian tissue may pose some **risk of reseeding malignancy**^{2,3}, however, there is **demonstrated patient interest** in fertility preservation in cases of ovarian tumor⁴
- These cases describe **OTC in setting of pediatric ovarian tumor and metastasis**

Purpose

- To discuss **two cases of ovarian tumor** (primary and secondary) in pediatric patients undergoing OTC
- To describe and outline **approach to fertility preservation and OTC** in patients with unique cases of **ovarian tumor**

Methods

- Laparoscopic right oophorectomy performed in 4-year-old prepubertal girl with **primary ovarian Sertoli-Leydig cell tumor** and DICER1 variant and 13-year-old pubertal girl with **metastatic ovarian rhabdomyosarcoma** following appropriate fertility preservation counseling
- Bisected ovary** section of 4-year-old girl and **punch biopsy** of ovary of 13-year-old girl examined by pathology and processed for cryopreservation

Results

Case One: Primary Ovarian Sertoli-Leydig Tumor

- No residual tumor** identified on bisected ovary specimen in 4-year-old patient
- After extensive discussion, family **opted to store cryopreserved tissue** for future use knowing risks and options for use of tissue

Case Two: Ovarian Metastasis in Rhabdomyosarcoma

- Germ cell-containing follicles** and **unknown metastasis** of rhabdomyosarcoma identified on 4mm punch biopsy in 13-year-old patient
- After extensive discussion, family **opted to store cryopreserved tissue** knowing risks and potential future fertility preservation technologies to safely utilize tissue

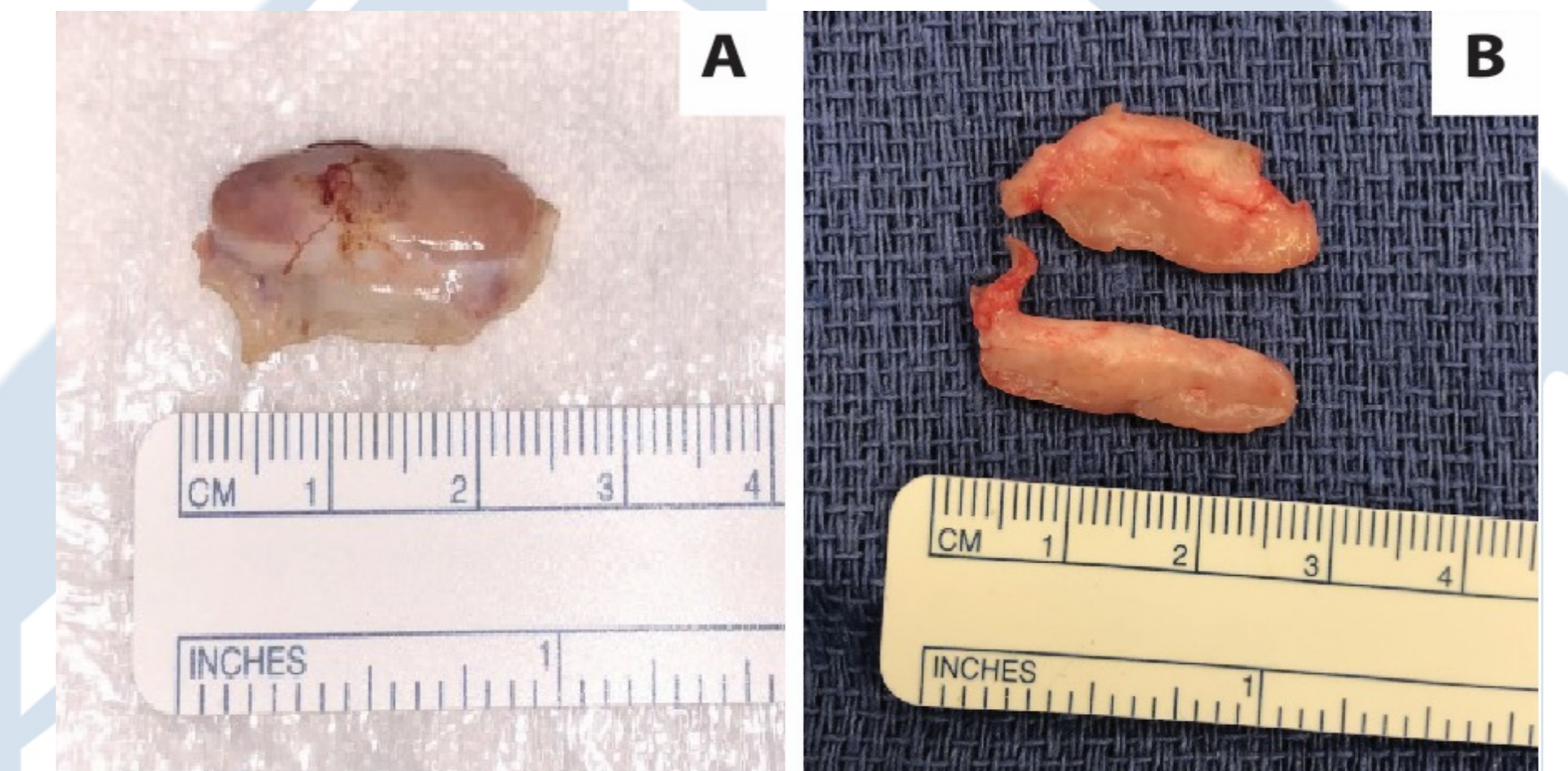


Figure 1. Gross images of right ovary of 4-year-old patient. (A) Right ovary after removal during unilateral oophorectomy. (B) Right ovary bisected longitudinally with one section sent to pathology.

Discussion

- Individual diagnoses determined **size of sufficient tissue** for histologic evaluation (Figure 2)
- For presumed normal ovaries, **punch biopsy** recommended for pathology prior to OTC processing in case of discovery of **metastasis**
- For primary ovarian tumors, **bisected ovary** recommended for pathology prior to OTC processing to **decrease likelihood** of using malignant tissue in future
- Both patients **chose cryopreservation of tissue**
- Advancements** in re-implantation of ovarian tissue, in vitro maturation, or in vitro fertilization indicate **viability of future tissue usage** even with ovarian malignancy

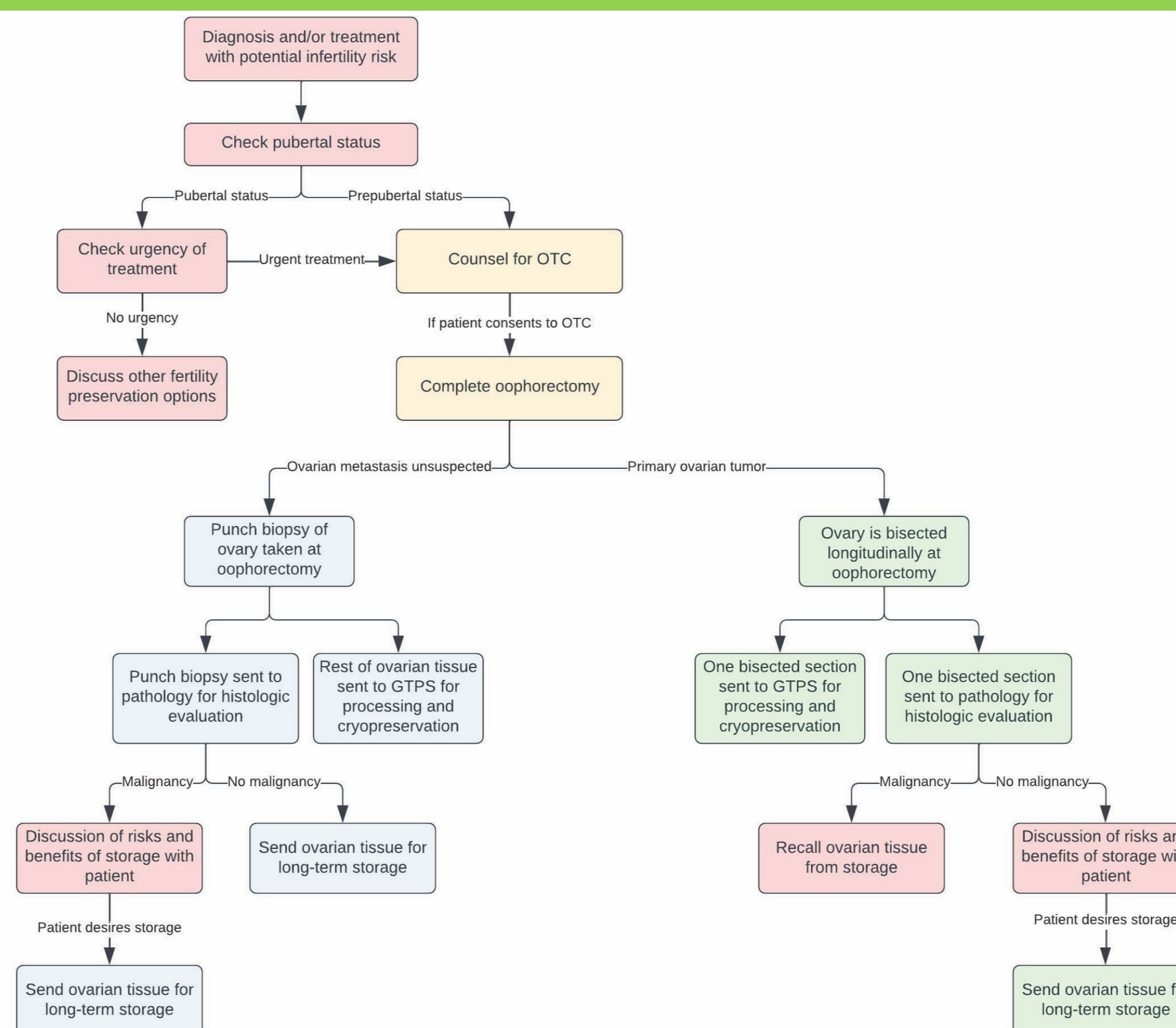


Figure 2. Algorithm for approaching fertility-threatening diagnoses with size-specific considerations for biopsy sent to pathology for histologic evaluation.

Conclusion

- Incorporating OTC alongside standard** of care for all patients with fertility-threatening diagnoses, including ovarian tumor
- Routine pathology alongside oophorectomy **to identify ovarian metastasis** and inform future tissue use
- Thorough discussions** with patients and families required prior to decision of long-term storage, especially in diagnoses involving ovary
- Necessity and **importance of OTC and flexibility of multidisciplinary team** in setting of fertility preservation

References & Acknowledgements

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