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A child with malignant ovarian tumor and Mayer Rokitanisky Kuster Hauser (MRKH) syndrome

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Background: Ovarian tumors occur in an estimated 2.6/100,000 girls per year, excluding functional lesions. 10 to 20% are malignant and they represent 3% of cancers in girls under the age of 15. Ovarian cancer is rare in childhood. This explains why there are only scattered reports on it in the literature and why there is a lack of specific pediatric treatment. Congenital anomalies of the Mullerian system are common defects, reported in up to 3.2% of all women. Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome, the most severe anomaly of Mullerian system, characterized by absent vagina and uterus congenitally, both ovaries are of normal size and fallopian tubes are normal; rudimentary uterine horns may be present in this syndrome.

Case: A 12 years old child comes with abdominal swelling of 4weeks and worsening of abdominal pain for 2 weeks. It does not start menarche. She is admitted with acute abdomen due to ovarian tumor torsion. Further diagnosis modality, management and patient outcome will be discussed during the presentation.

Conclusion: The diagnosis of ovarian tumors in pediatrics is often difficult and delayed because of non-specific symptoms and diverse presentations on imaging. Concurrent association of pelvic mass with mullerian agenesis can be a diagnostic and management dilemma. Besides malignant ovarian tumor is rare in childhood, having concomitant mullerian anomaly which may contribute the development of neoplasm is rare finding.

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Evidence for existence of a small population of radiation resistant stem cells

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There are many data that support the concept of drug resistant stem cell populations. Stem cells as a sub-population of radiation resistant tumor cells are almost generally accepted as a component of human tumors. This has conceptually been extended to the concept that the stem cell population is radiation resistant and is the basis for local re-growth of tumors treated by radiation with intent to cure. There have been no quantitation of 1] the fraction of tumor cells that are members of this stem cell population; 2] radiation sensitivity of these resistant cells relative to the other tumor cells and 3] micro environment of these stem cells. There has not been generated experimental data that supports the concept of a small radiation resistant population of stem cells. In fact, the published data encountered have yielded the opposite of. For example, two experiments, performed in laboratories in different countries have reported that the TCD50 values [dose to inactivate half of the irradiated tumors] were significantly less for transplants of the recurrent tumors than for the previously un-irradiated tumors. Further radiation cell survival curves for numerous mammalian cell lines studied *in vitro* by measuring survival fraction vs. dose for survival fraction of 10 provided no evidence of a resistant sub-population. One current paper, found that decreasing the number of endothelial cells in tumors did not alter tumor response. These findings and others will be considered.

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