CASE REPORT

A Post-Chemotherapy induced mature ovarian teratoma

Faruqi SA, Saquib M. and Noumoff JS

ABSTRACT
We report a case of grade 3 immature teratoma after its chemotherapy induced maturation to benign teratoma. The tissue in this case was that of metastatic implants postchemotherapy and contained only mature, benign elements. The tumor in this mature teratoma was found to have monosomics in eleven chromosomes and trisomics in four. These abnormalities in a mature post-chemotherapy teratoma may be of significance in pointing out which tumors have the potential to revert to malignancy.

INTRODUCTION
Mature teratomas that develop after chemotherapy from immature malignant teratomas are rarely known cytotogenically. A case from our laboratory was reported earlier, with that reported case having both the primary immature malignant as well as the post-chemotherapy induced, mature benign tumors. We now report another such case where chromosomes were analyzed in the mature tumor after its chemotherapy induced maturation. The primary immature malignant tumor was not available for study. A number of chromosomal abnormalities were found in this tumor, despite the fact that mature tumors almost always possess a normal 46,XX genome.

CASE REPORT
A 30-year-old G2 P2002 white female underwent surgery at another institution for an immature grade II teratoma. A left salpingooophorectomy and a right ovarian cystectomy were completed. She received four courses of platinum, vinblastin and bleomycin and was observed thereafter. Approximately one year following therapy she was seen by the Division of Gynecologic Oncology for follow up. A CT scan was remarkable for multiple 2-3cm peritoneal nodules with pelvic fluid. The patient was otherwise asymptomatic. Exploratory laparotomy was performed with complete staging procedure including total abdominal hysterectomy-right salpingo-oophorectomy and multiple biopsies. All nodules including ovarian excrescences were microscopically confirmed to be mature teratoma with benign cartilage and glandular elements.

MATERIAL AND METHODS
The material was accessioned by the department of surgical pathology. Tumor was studied in detail both for its gross appearance and also microscopically. For histopathologic diagnosis, the material was fixed in Bouin’s solution and serially sectioned. After the usual staining of the slides, histopathologic analysis and diagnosis were conducted. For cyto genetic study, the cystic area of the tumor was selected by the histopathologist, transferred under sterile conditions in cold RPMI-1640, and brought to the research laboratory for culture and cyto genetic studies. Tumor digestion, culture, harvest, slide preparation, staining and analysis were the same as described earlier.

RESULTS:
Histopathology: Gross morphology of the cyst was consistent with a mature teratoma. Microscopically, the mature tissue was of various types, predominantly glial with some cartilaginous elements.

Cytogenetics: Numerous chromosomal anomalies that were present in this material of the post-chemotherapy induced mature teratoma included monosomics of eleven and trisomics of three
chromosomes. A single translocation involving chromosome 8 and 14 although apparently random and not included in the karyotype could not be discounted. This anomaly was discovered in addition to the non-random derivative 8 that had translocated to an unidentified chromosome. The karyotype of only converted residual mature benign component is as follows:

30-49, XX, -1, +2, -4, +5, +6, -7, der(8)t(8;?)(p;?), -13, -14, -15, -18, -19, -20, -21, -22[cp8].

CONCLUSION

In this study we identify specific chromosomal abnormalities in implants of mature benign teratoma presumably representing post-chemotherapy induced maturation of immature teratoma. The finding of chromosomal abnormalities in chemotherapy induced benign implants has previously been described from this laboratory for immature teratoma and elsewhere in case of testicular germ cell tumor. The specific chromosomal abnormalities identified in this report are different from those reported earlier. A weakness of this study is that we do not have the chromosomal analysis of the primary tumor and hence cannot compare the initial makeup to its chemotherapy induced metastatic site. That having been said, the current case described additional evidence that the otherwise histologic benign transformation does not necessarily confer transformation to a benign genomic constitution. Additional studies will be needed to identify abnormalities that might explain and predict which cases may revert to malignancy and hence should be treated aggressively.

LITERATURE CITED


INSTRUCTIONS TO AUTHORS

The Journal of Baqai Medical University is a biannual journal of medical and related sciences published by the Baqai Medical University. The journal is intended as a vehicle for the young medical scientist, research workers as well as senior scholars, for the exchange of information and publication of their research findings.

The manuscript prepared, according to specifications, given below, should be submitted to the Editor, Journal of Baqai Medical University. The Journal will be published twice a year (January and July) and the following categories will be included:

a. Original scientific articles.
b. Review articles on important medical topics.
c. Case report of educational value.
d. Short communication for quick dissemination of information.
e. Letters to Editor.
f. Book review.
g. Announcement regarding important meetings, workshops, seminars and other events relating to Health Sciences at national and International level.

1. Two complete copies of the manuscript, typed in double space on one side of the paper, with clear margin of atleast one inch on both sides, are to be submitted for consideration. All words that are meant to be italicized should be underlined.

2. The manuscript should be based on an original work, which has not been submitted or published elsewhere.

3. All papers submitted for publication are subject to review by experts in the area of specialization.

4. (a) The responsibility for the scientific contents and statement made by the author(s) of the accepted paper, lies solely on the author(s).

(b) Written consent of all the authors on a prescribed proforma is essential.

(c) Copyright of the paper should be transferred to the Journal.

5. Manuscript with language deficiencies, error in syntax and typing mistakes may be returned back or may cause unnecessary delay in publication and therefore requires a thorough examination before submission.

6. The title page should contain, in addition to the article, Title, Author(s) Name(s) and Address, Key word and Abstract of the paper of up to 200 words. The name of the corresponding author should be properly indicated.

7. Tables, Photographs (on glossy paper) and illustrations to be submitted in duplicate, separately. Legends of the illustration, tables etc. should be typed on separate sheet. Formulae to be written by hand. Photograph(s) should be submitted only when extremely necessary and data can not be expressed in any other form.

8. The manuscript should be divided into the following sections for uniformity's sake.

Abstract, Introduction
Materials and Methods, Results
Discussion
Observation (if applicable)
Conclusion
References

9. References to be numbered as they appear in the text and listed serially at the end.