

## INTRODUCTION

While malignancy associated hypercalcemia is a common finding among 20% to 30% of adult patients with breast cancer, lung cancer and multiple myeloma, it happens in less than 5% of female genital tract malignancies. [1] The three most common mechanisms associated with hypercalcemia are: local osteolytic hypercalcemia, humoral hypercalcemia of malignancy (HHM) caused by the parathyroid hormone-related peptide (PTHrP), and other humoral factors including prostaglandin, tumor necrosis factor (TNF), osteoclast activating factor and transforming growth factor (TGF). PTHrP and 1, 25 dihydroxy vitamin D (1, 25 Vit D) have been reported as humoral factors for dysgerminoma. [2] Humoral hypercalcemia of malignancy (HHM) can be caused by ectopic paraneoplastic production of 1, 25 dihydroxy vitamin D due to hyperactivity of 1 alpha-hydroxylase enzyme.

## CASE PRESENTATION:

We present a case of a 19- year-old female, who was admitted with bilateral dysgerminomas and significant hypercalcemia. Her labs revealed low levels of parathyroid hormone (PTH), low normal levels of PTHrP, and high normal value for 1,25 Vit D. Normally, high PTH causes high Vitamin D and low PTH causes low vitamin D levels. Thus, in the setting of low PTH, a normal or high normal vitamin D level is considered to be inappropriately normal and suggests ectopic vitamin D production due to ectopic production of 1 alpha-hydroxylase.

## RESULTS

This was the case with our patient, who was found to have ectopic production of these humoral factors: 1, 25 Vit D and 1, alpha-hydroxylase, leading to hypercalcemia that resolved after the resection of dysgerminomas. This case not only adds to the limited number of cases of hypercalcemia associated with dysgerminoma, rather it is the first case report showing that vitamin D and 1 alpha-hydroxylase can be paraneoplastic factors. We, therefore, advocate that this rare but possible cause of hypercalcemia should be kept in mind when investigating a case of dysgerminoma.

## CONCLUSION

Ovarian dysgerminomas can produce ectopic 1, alpha hydroxylase and 1,25, dihydroxyvitamin D, which can lead to production of hypercalcemia in the absence of elevated PTH and PTHrP. This is a rare humoral paraneoplastic factor .

## REFERENCES

- 1). Stewart A. Hypercalcemia associated with cancer. N Engl J Med. 2005;352:373–379.
- 2). Allbery SM, Swischuk LE, John SD. Hypercalcemia associated with dysgerminoma: case report and imaging findings. Pediatr Radiol 1998; 28: 183–185

## DISCLOSURE

The authors have no conflict of interest to disclose.