

# Paraneoplastic Polycythemia Secondary to Testicular Tumors

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## INTRODUCTION

- Paraneoplastic syndrome (PNS) is characterized by a clinical manifestation due to humoral factors such as hormones or cytokines secreted by tumor cells or by an immune response against the tumor.
- This clinical condition usually disappears by treatment of primary disease or recurs with disease progression.
- Development of polycythemia as a PNS is rare and is particularly reported to occur in renal cell carcinoma, hepatocellular carcinoma and gynecological cancers. However, there is only a small number of paraneoplastic polycythemia cases associated with germ cell tumors (GCT).

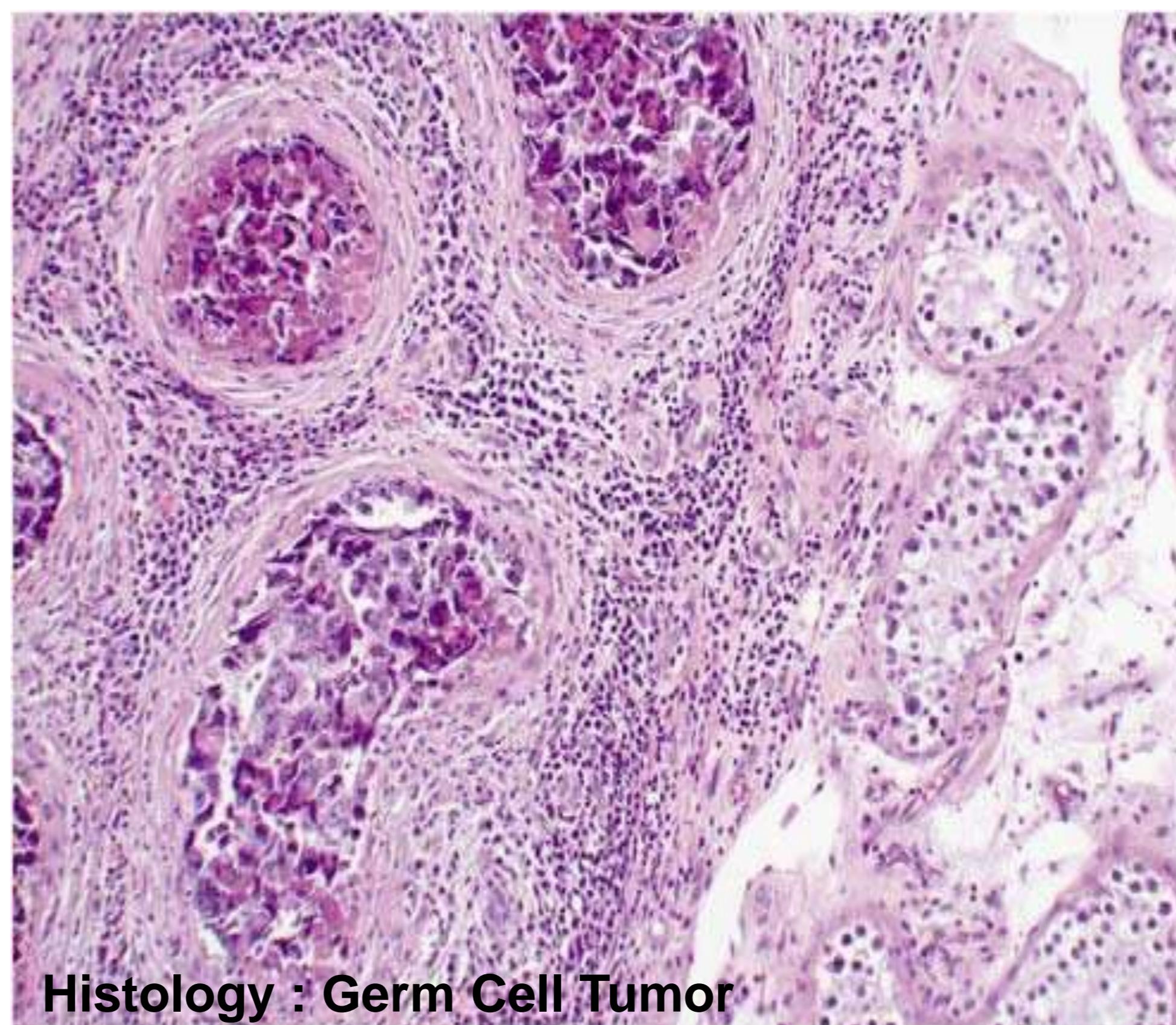
S.No	CHARACTERISTICS	Range ( Mean )
1	Age ( In years )	20-37 ( 29.6 )
2	<b>Stage</b> pT1a <b>pT1b</b> pT2 pT3	3 <b>9</b> 2 2
3	<b>Histology</b> <b>Embryonal</b> Teratoma	11 5
4	Preoperative Hb	16.4-18.5 ( 17.1 )
5	Preoperative HCT	46.6-50.5 ( 46.3 )
6	Post operative Hb	14.7-19.2(16.6)
7	Post operative HCT	43.1-56.5( 48.3 )
8	<b>Metastasis</b> Pulmonary <b>Retropertitoneal nodal metastasis</b> Non regional nodal metastasis	4 <b>5</b> 3

## RESULTS

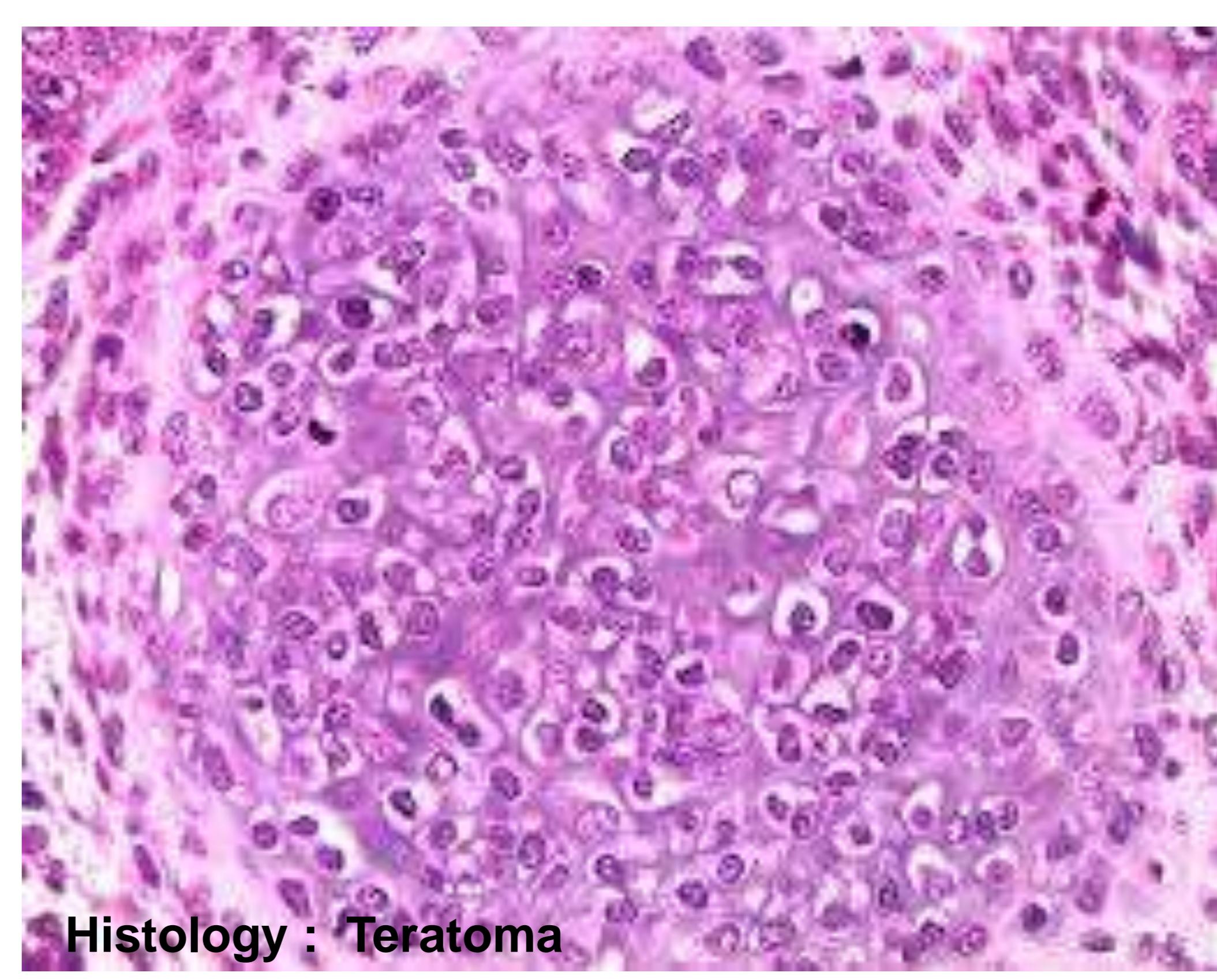
- During study period 16 patients meeting the study criteria were retrospectively analyzed.
- The mean age was 19.6 years with ranges 20-37, 11 patients have mixed germ cell tumor with embryonal cancer, while 5 had pure teratoma on histology.
- The pathological stage was pT1b in majority of patients.
- The mean preoperative hemoglobin was 17.1 while the mean postoperative hemoglobin was 16.6 with mean hematocrit of 46.3 and 48.3 respectively.
- All but 4 patients had metastatic at the time of presentation, mostly to the retroperitoneal lymph nodes.

## OBJECTIVE

To determine the association of Paraneoplastic polycythemia secondary to testicular cancer and to determine the prognosis of patients presented with Paraneoplastic polycythemia secondary to testicular cancer.



Histology : Germ Cell Tumor



Histology : Teratoma

## METHODS

A retrospective review of the patients presented to Shaukat Khanum memorial cancer hospital, Lahore with testicular cancer. Paraneoplastic polycythemia was defined based on preoperative hemoglobin of more than 16. Patients charts were reviewed retrospectively during the study period from January 2019 till December 2024 for patient characteristics including Age, Histology, Pathological staging, Preoperative / Postoperative laboratory findings of haemoglobin and haematocrit.

## DISCUSSION

The most important criterion in the diagnosis of paraneoplastic erythrocytosis associated with testicular cancer is the presence of high EPO levels in both the serum and the pathological specimen. Unfortunately EPO levels could not be measured in our case. So we could not comment on the association of raised Hemoglobin to Paraneoplastic Polycythemia due to the retrospective nature of study. Most patient at presentation had metastasis disease or developed metastasis within 6 months showing increased propensity for early metastasis. But most patient had good response to chemotherapy showing improved prognosis.

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