

## Chapter 8

# DIFFERENTIAL DIAGNOSIS AND DIAGNOSTIC PROBLEMS OF SEMINOMA

Serkan Yaşar ÇELİK<sup>1</sup>

### Introduction

Seminoma; which is a malignant germ cell tumor, accounts for approximately 30-40% of all testicular tumors. It used to be classified in two groups as classical type and spermatocytic seminoma. However spermatocytic seminoma is no more accepted as a seminoma type in the World Health Organization (WHO) classification in 2016 (Ulbright, et al., 2016). Spermatocytic tumor is adopted as a replacement for spermatocytic seminoma, to avoid potential confusion with the unrelated usual seminoma. Spermatocytic tumor is now in the group of 'Germ cell tumors unrelated to germ cell neoplasia in situ' with teratoma and Yolk sac tumors.

Seminoma is seen between second to fourth decades; however it can also be seen in fifth and sixth decades. The associated risk factors of seminoma are cryptorchidism (10%), infertility, low socioeconomic status, immunodeficiency disorders, genetic susceptibility (family history), subfertility, testicular microlithiasis, male genital malformations, perinatal problems (Maternal bleeding, number of siblings, twinning, inguinal hernia, low birth weight), in utero exposure to diethylstilbestrol, Occupations (firefighting, aircraft maintenance) and exposure to pesticides (Ulbright, et al., 2016).

It is usually unilateral and rarely can occur in extratesticular midline location. The most common symptom of it is painless scrotal swelling. In one-third of the patients, scrotal heaviness or pain can be felt. In 3% of the patients the presenting symptom may be due to metastatic disease, usually lower back pain attributable to retroperitoneal lymph node metastasis. The most usual finding of seminoma is palpable testicular nodule. Rarely elevation of serum Human Chorionic Gonadotropin (HCG) or gynecomastia (2%) can be found in the patient (Epstein & Netto, 2014). There are uncommon paraneoplastic syndromes that may be seen in patients with seminoma including hypercalcaemia, polycythaemia, autoimmune haemolytic anaemia, exophthalmos, limbic or brainstem encephalopathy and membranous glomerulonephritis. Seminoma usually metastasizes initially to retroperitoneal lymph nodes and then to mediastinal, cervical lymph nodes. Visceral organ metastasis develop in later stages to liver, lung and bone.

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<sup>1</sup>Assist.Prof. Dr. Muğla Sıtkı Koçman University, Faculty of Medicine, Department of Pathology, sycelik@gmail.com

NANOG	+ 100%	+ 100%	-	-	-	-
EMA	-	- 2%	- 5%	+/- 46%	-	-
CD30	-	+/- 84-93%	-	-	-	-
Glypican-3	-	- 5%	+ 100%	+ 80% <sup>b</sup>	No data	-
Podoplanin	+	- 29% <sup>c</sup>	-	-	-	-
Inhibin	-	-	-	-	-	+/- 30-90%
S100	-	-	-	-	-	+/- 30-90%

<sup>a</sup>:Mononucleated trophoblasts only

<sup>b</sup>:Syncytiotrophoblasts> mononucleated trophoblasts

<sup>c</sup>:Cell apices only

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