

# Prípad SD-IAP No 528

referuje Karol Kajo  
Ústav patológie OÚSA, Bratislava



## Konzultačný prípad:

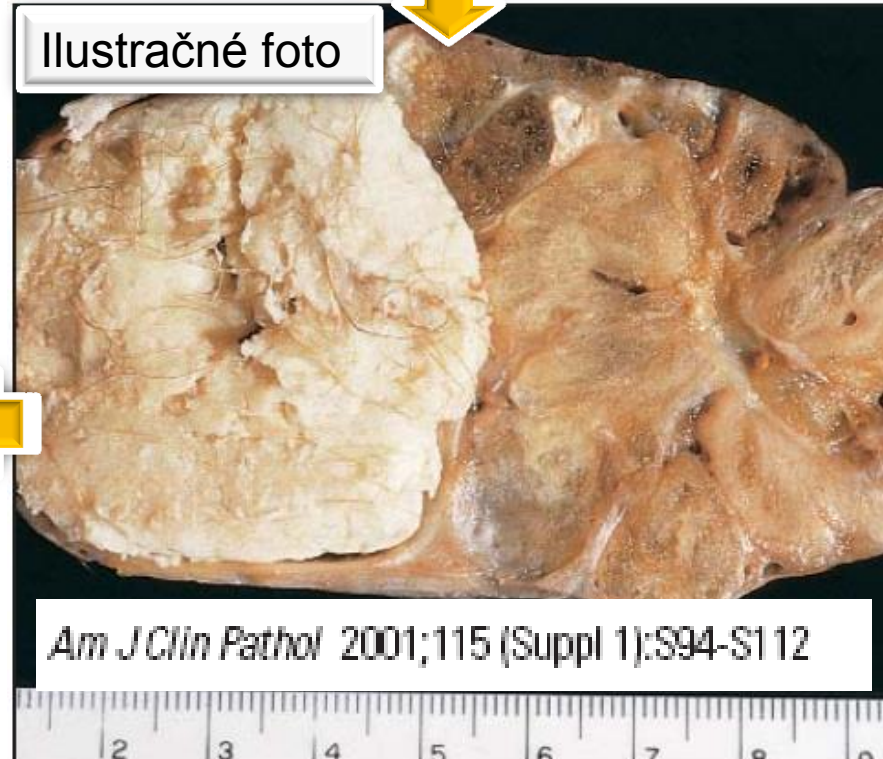
- od prim. MUDr. Cibička z FORLIFE, n.o. Komárno

## PRAVÉ OVÁRIUM

- štruktúry zrelého tridermálneho teratómu (ektoderm - koža; mezoderm - svalové tkanivo, tukové tkanivo a chrupavčité štruktúry; endoderm - enterické formácie) +...

- 46-ročná žena
- Klin. dg.:
- cystis ovarialis bilat.  
uterus myomatosus

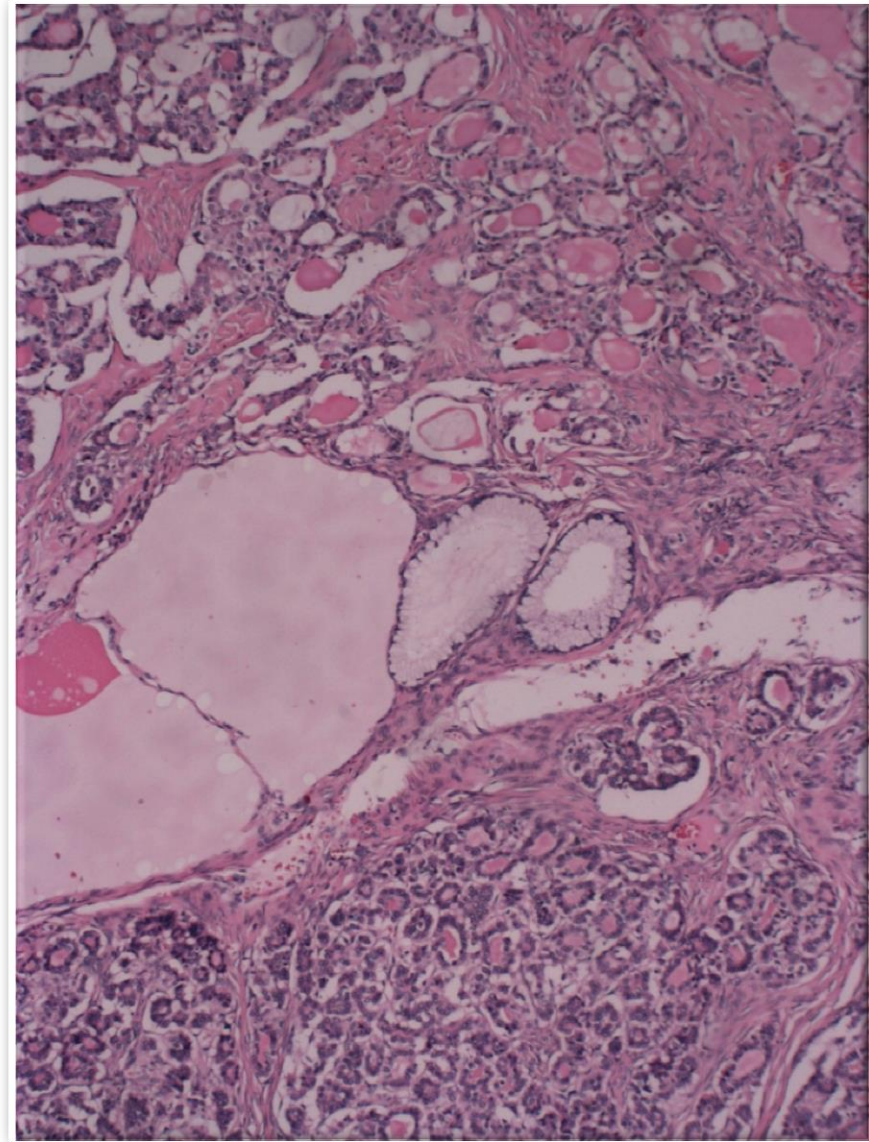
Ilustračné foto



...tak som to videl ja

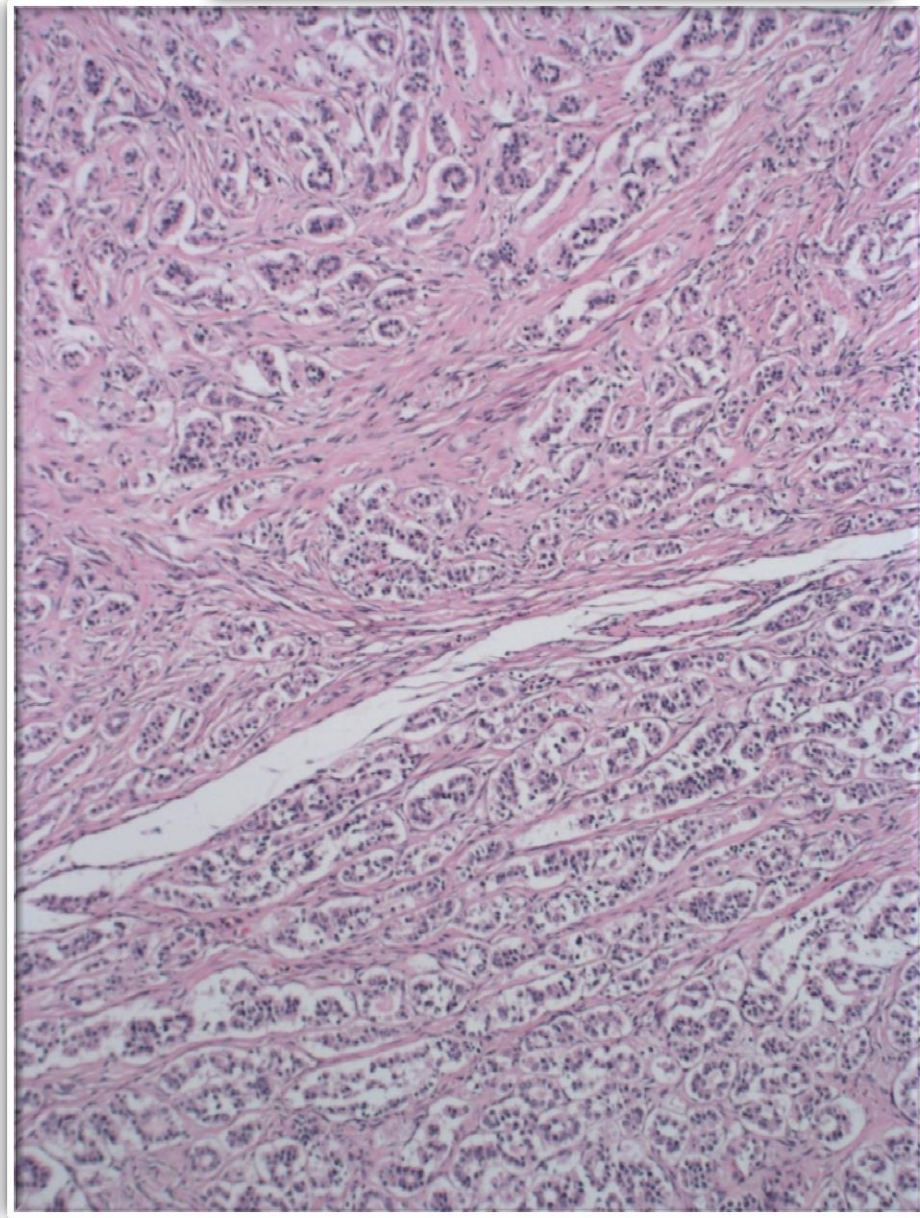
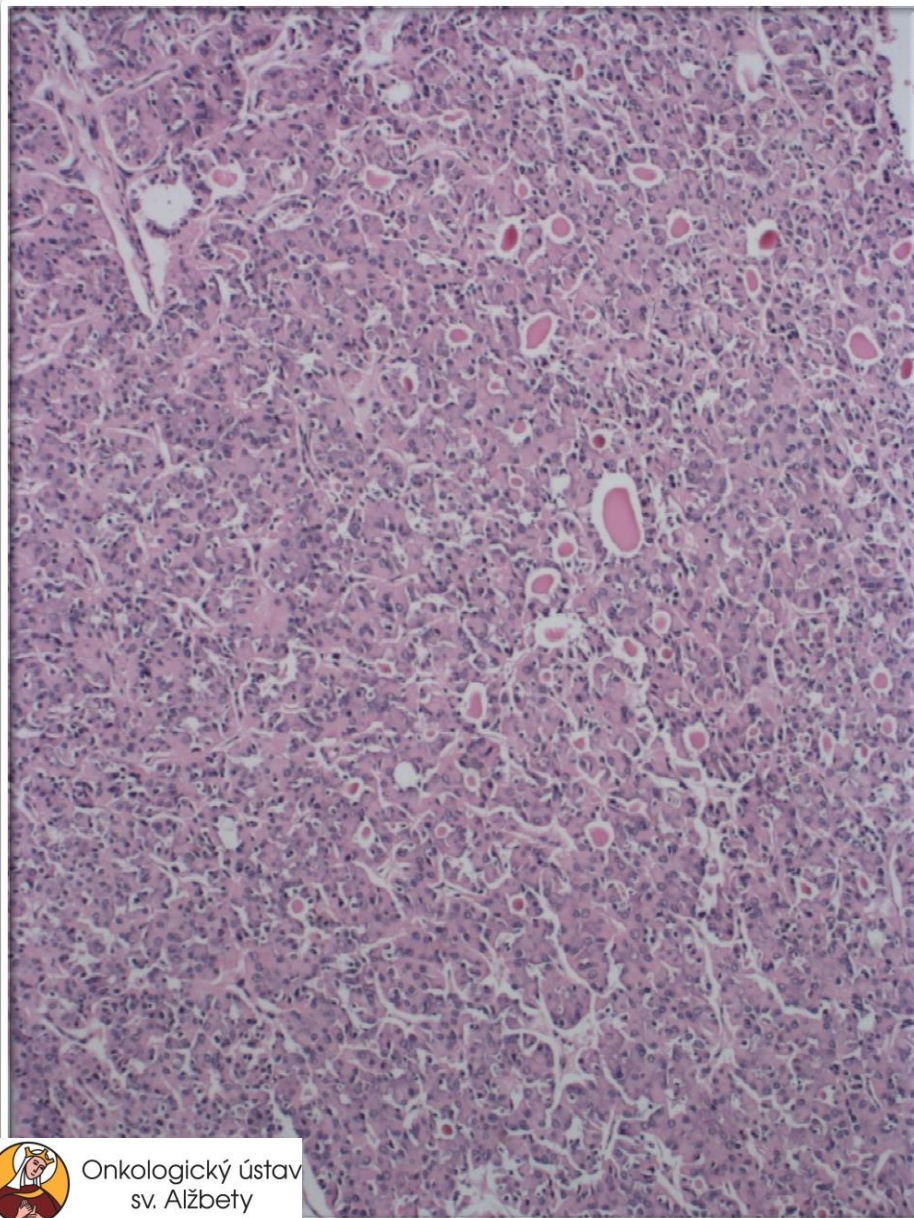


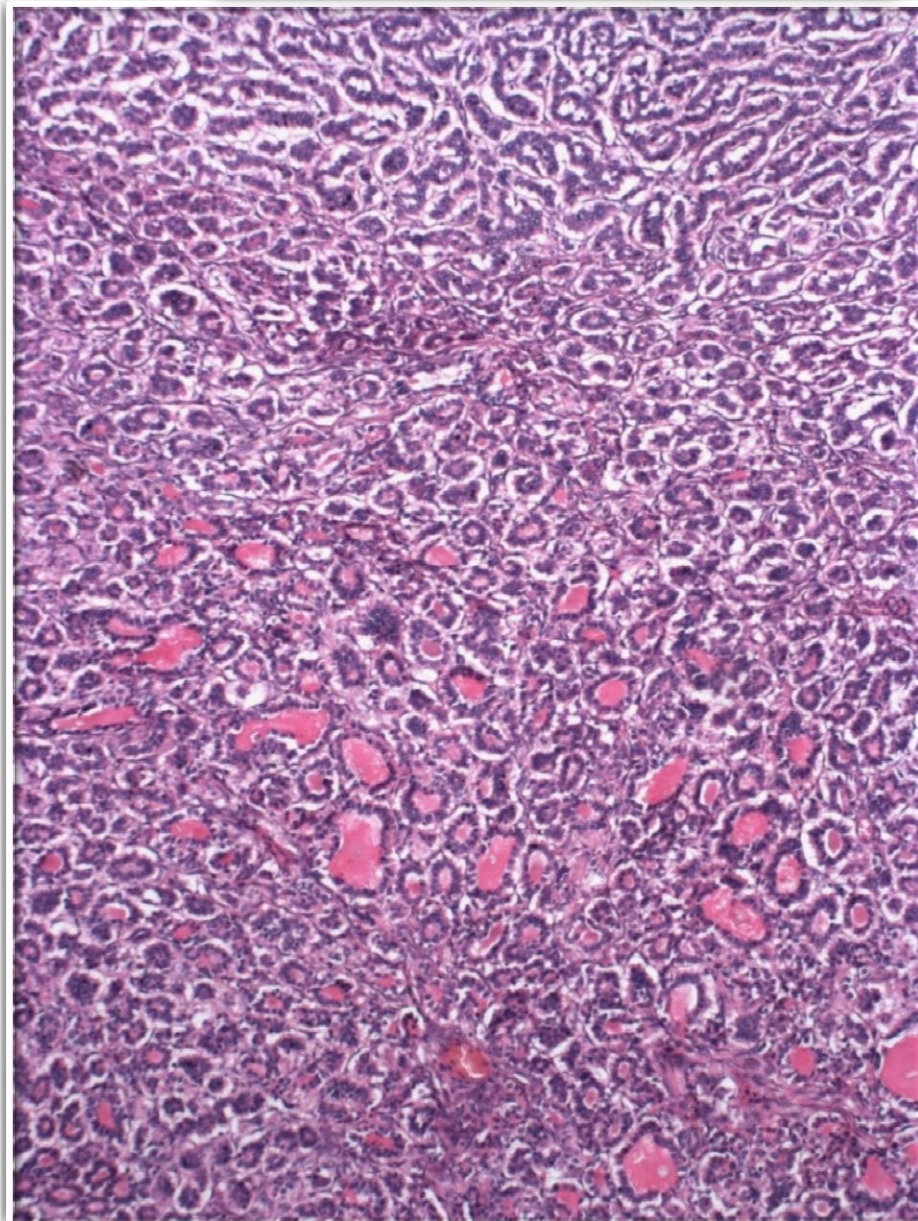
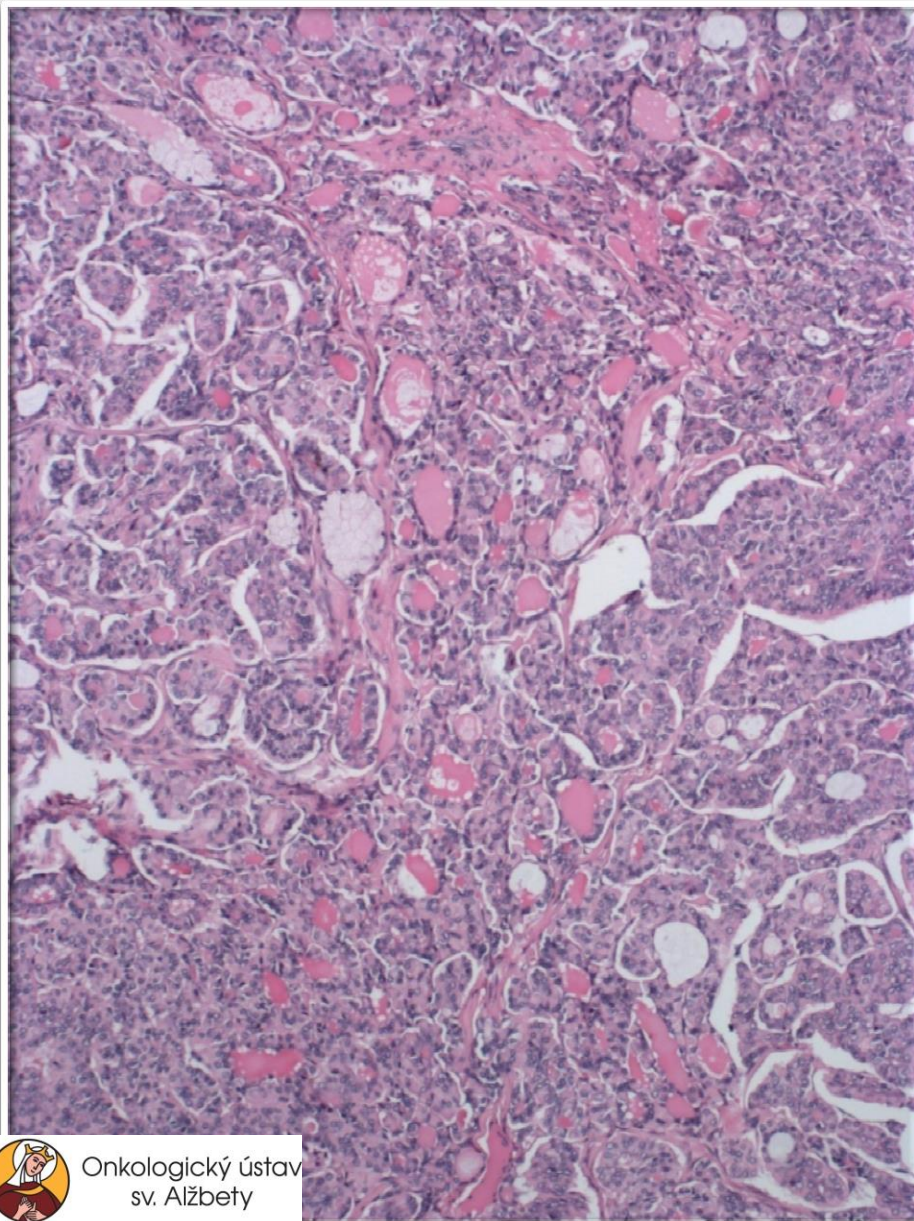
- **štruktúry zrelého tridermálneho teratómu**  
+
- rozsiahle nodulárne ložiská tvorené acinárnymi, alveolárnymi, trabekulárnymi, inzulárnymi a folikulárnymi štruktúrami bez jednoznačne propagácie cez puzdro ovaria

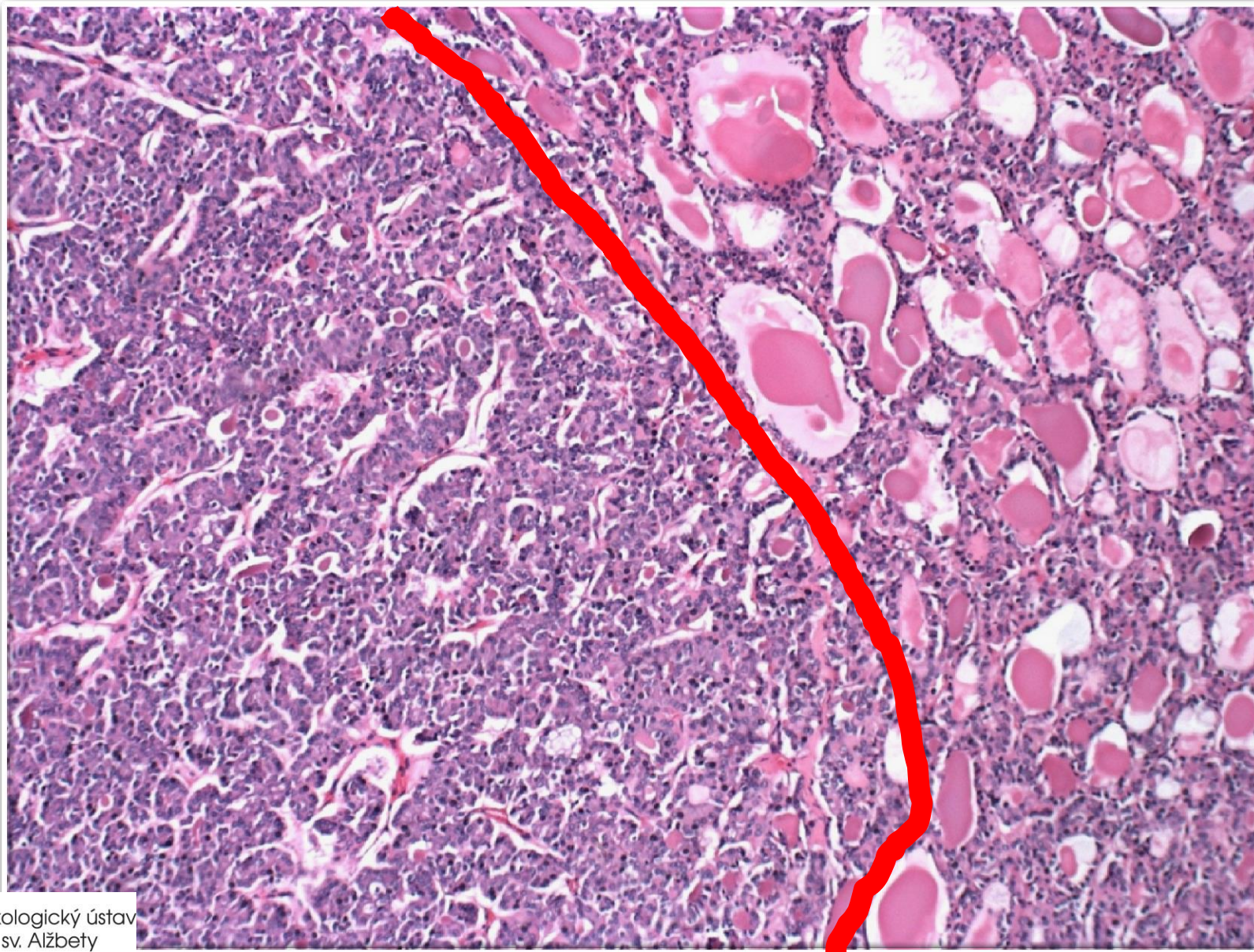


# Prípád SD-IAP No. 528

XX. Martinský bioptický seminár  
Lúčky 14.-15.11.2014

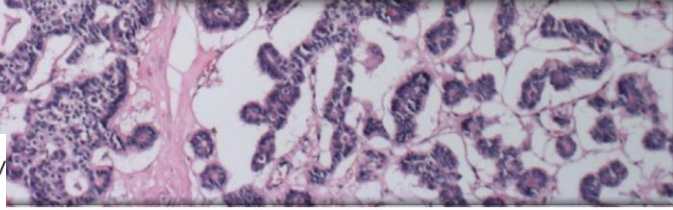
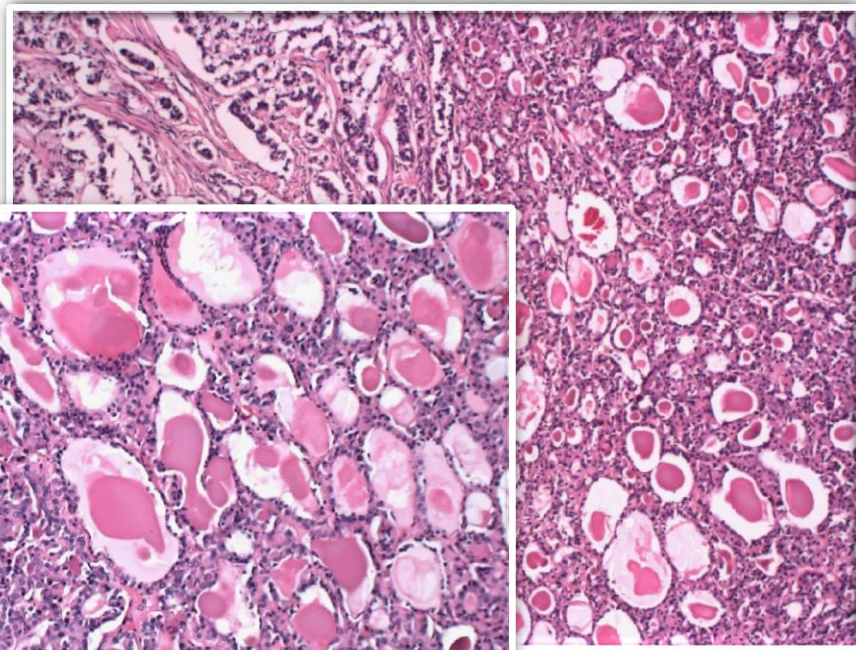
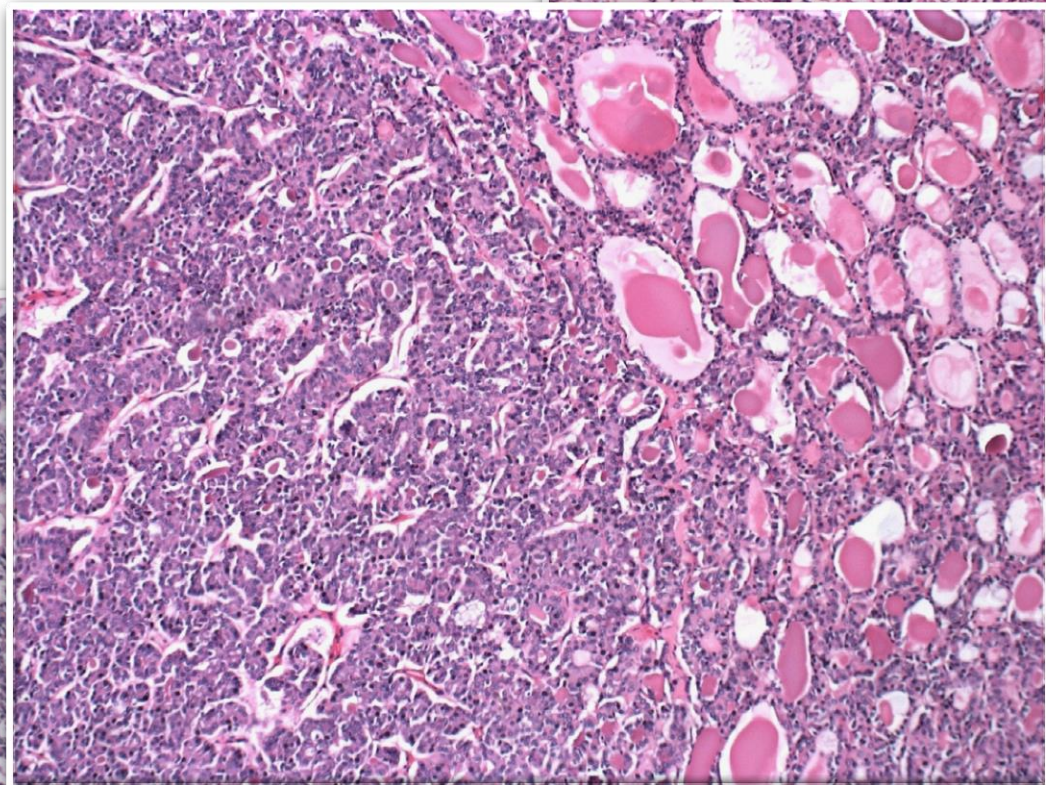
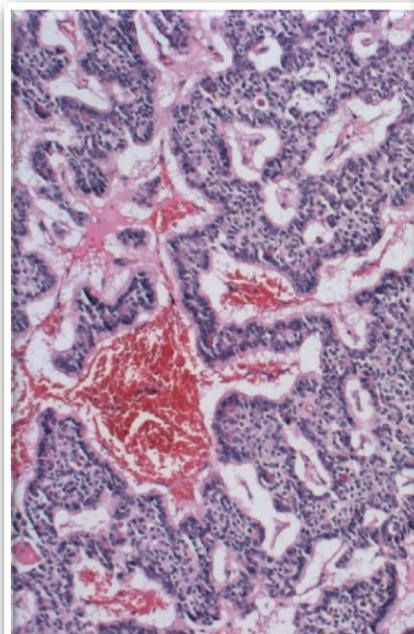






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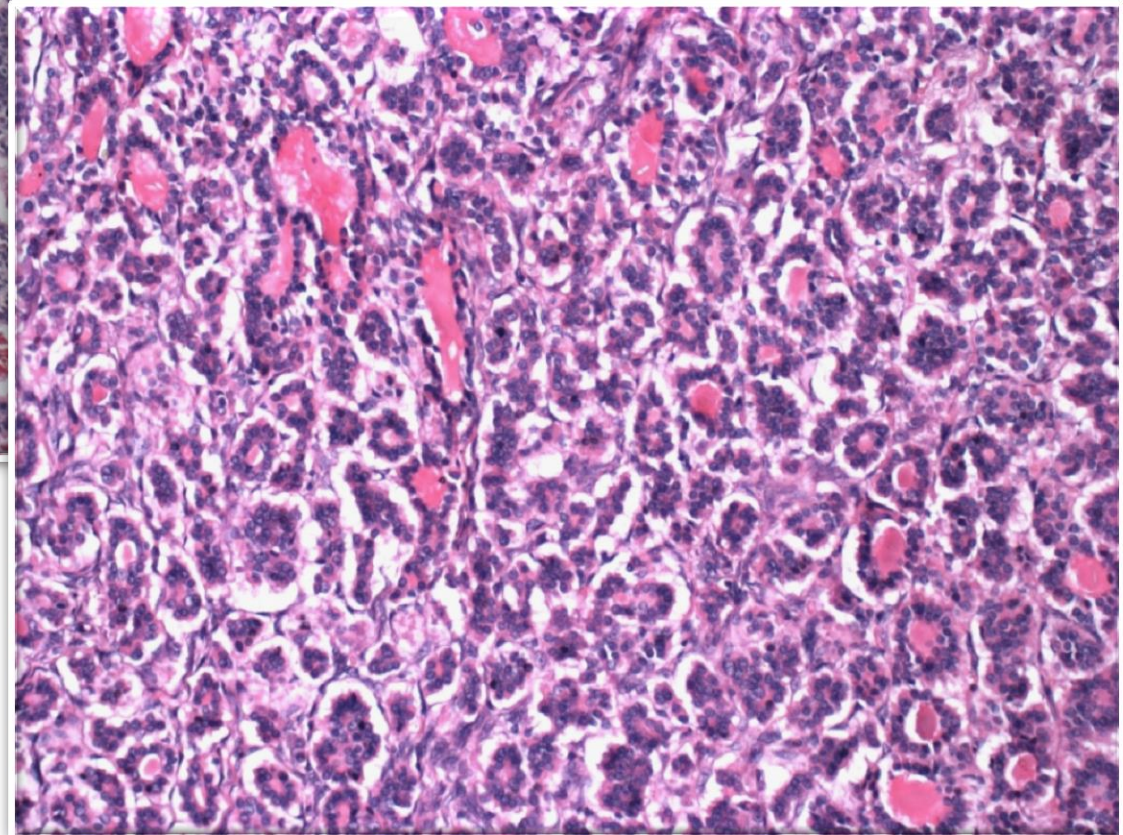
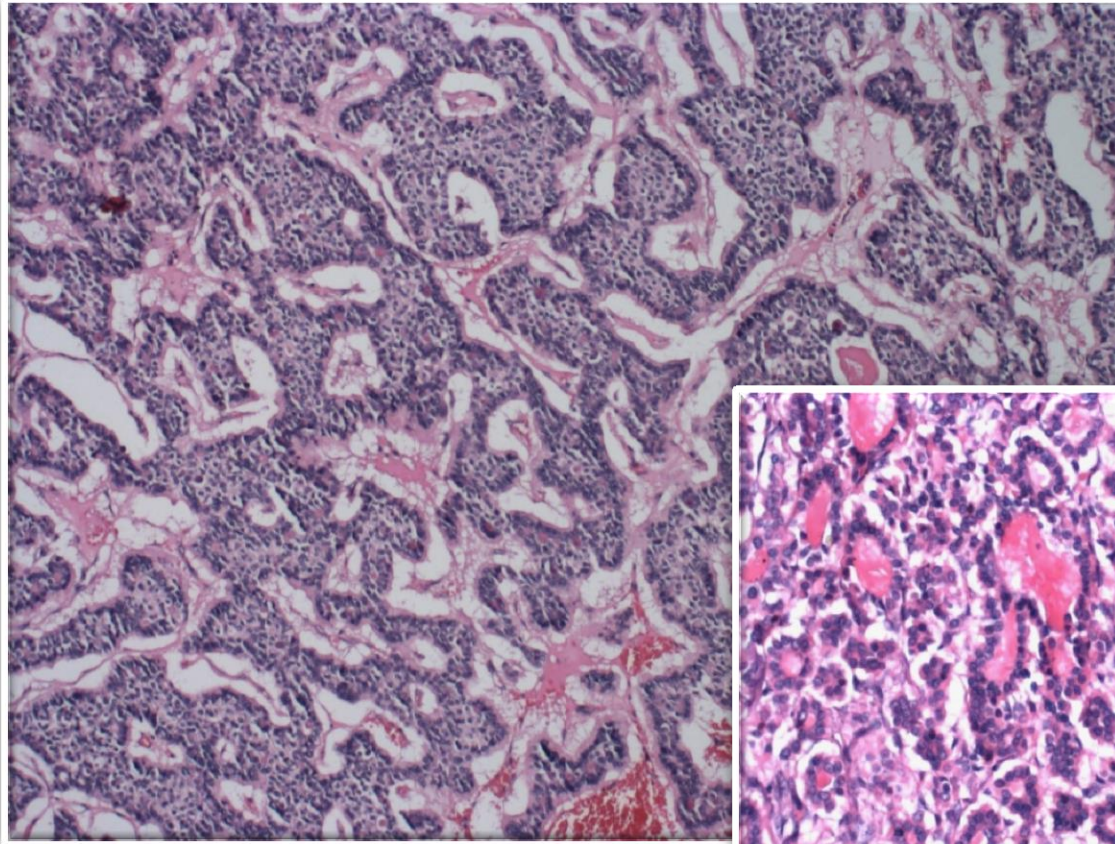
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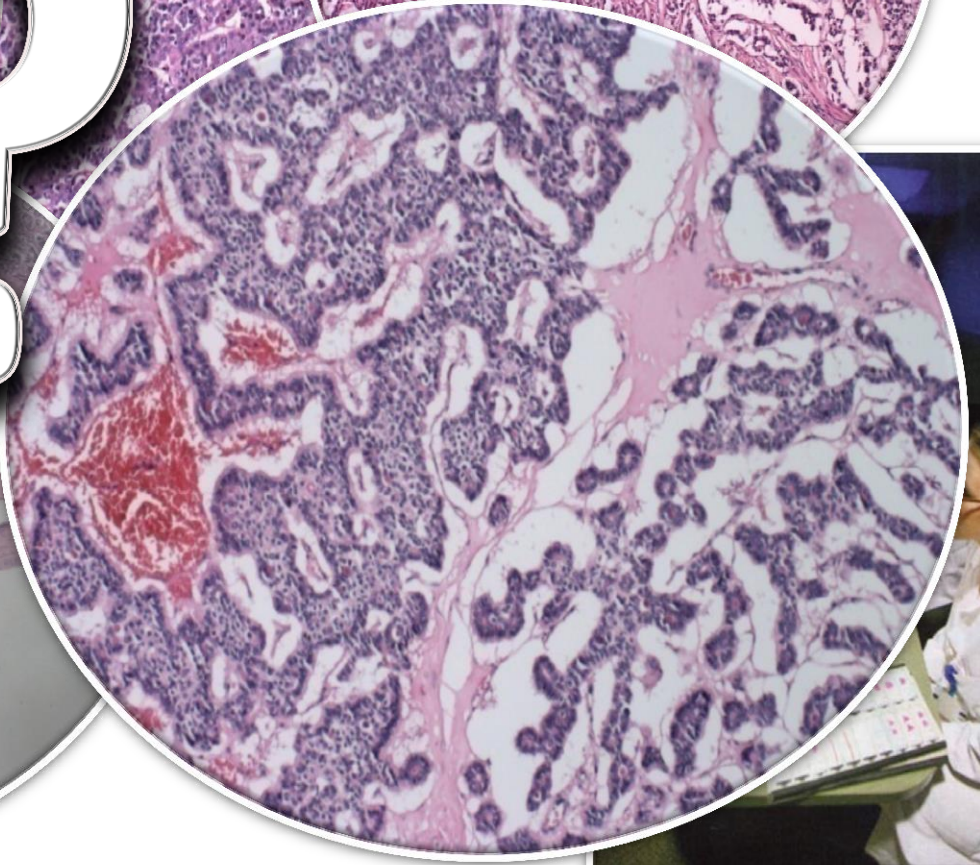
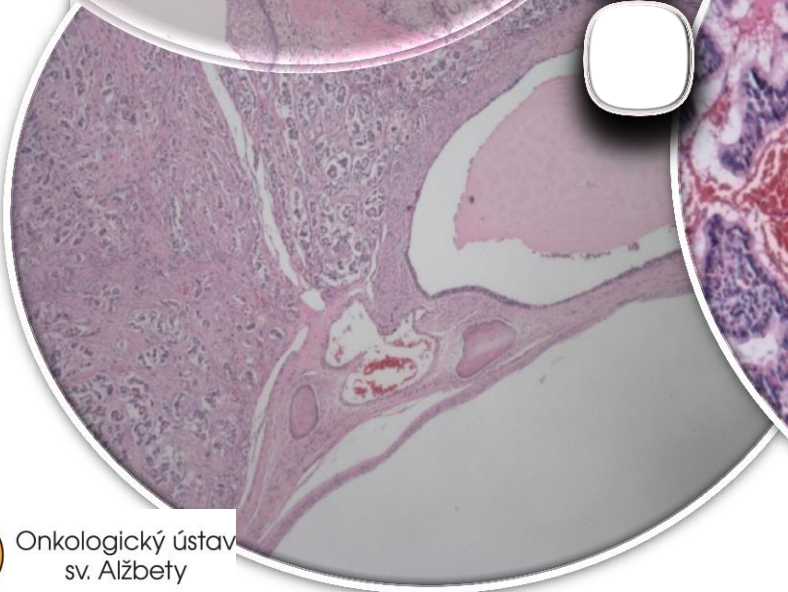
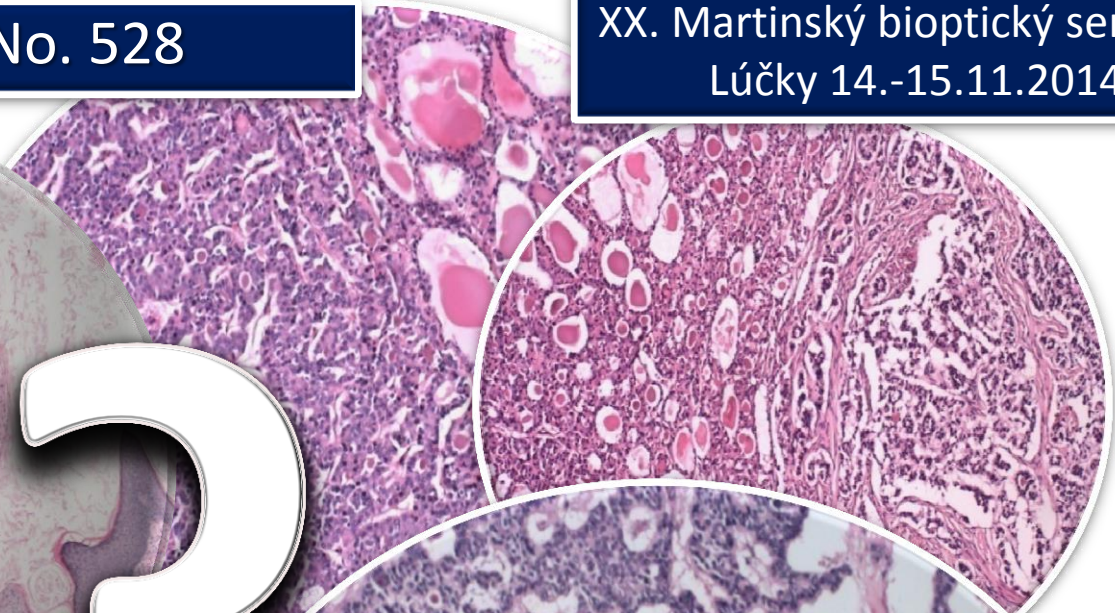
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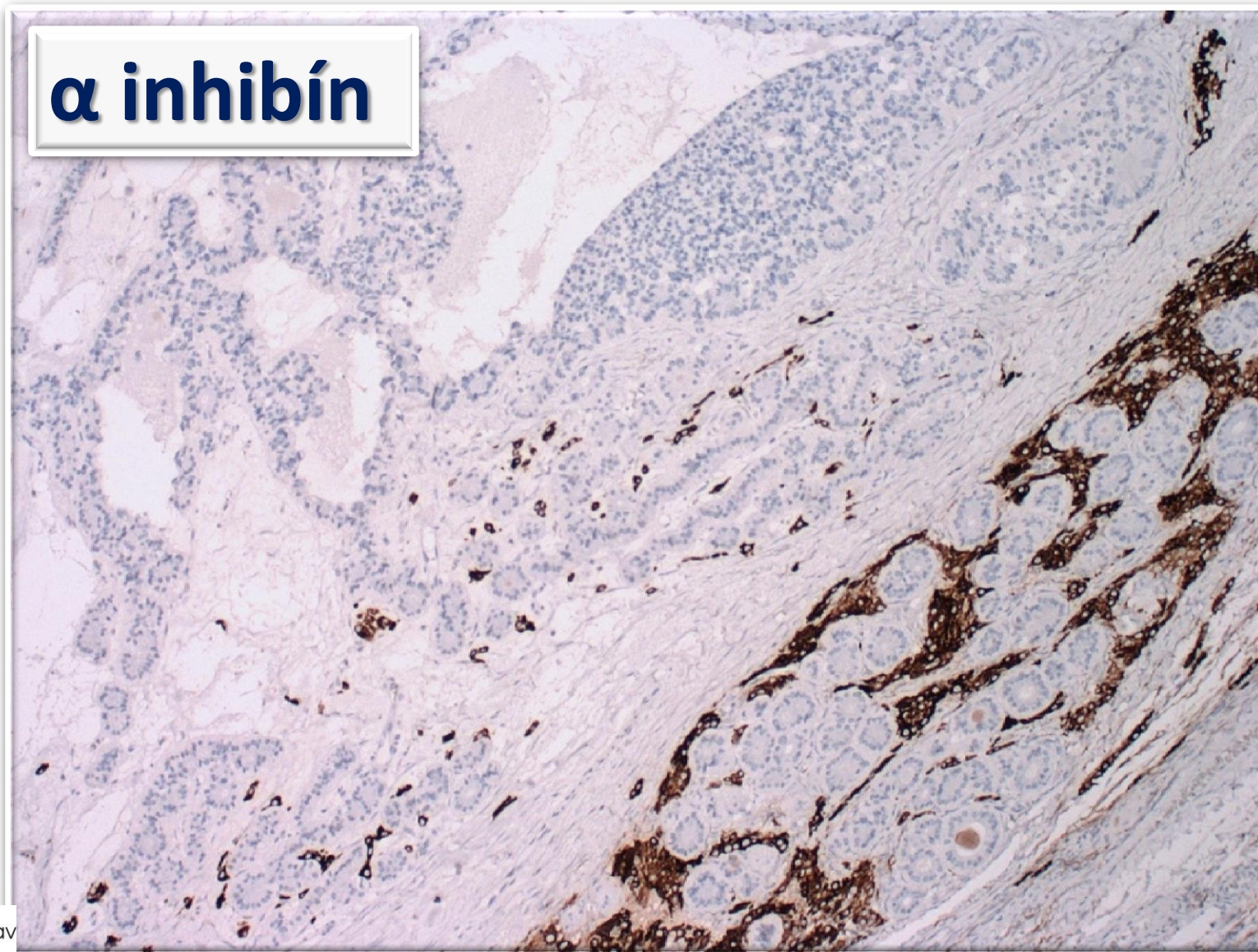


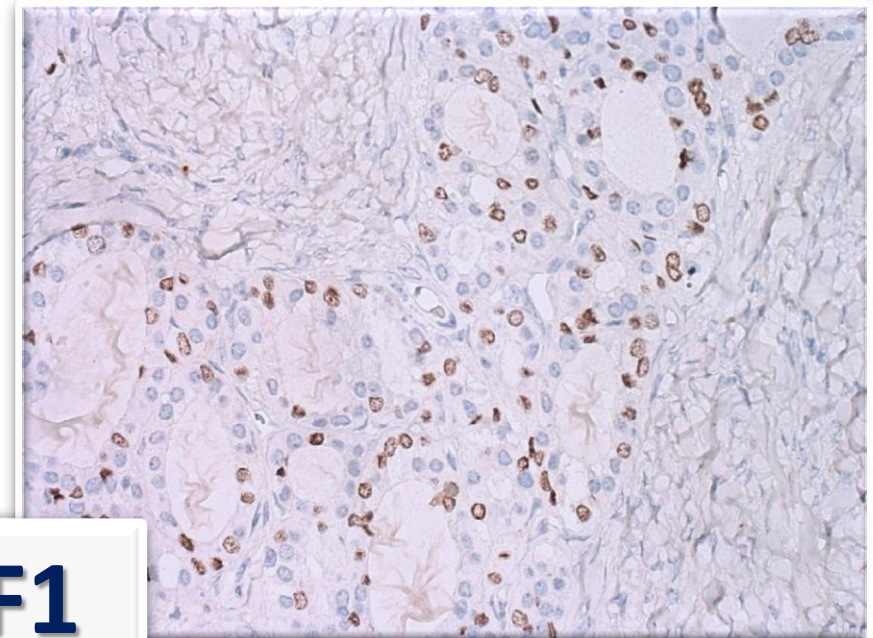
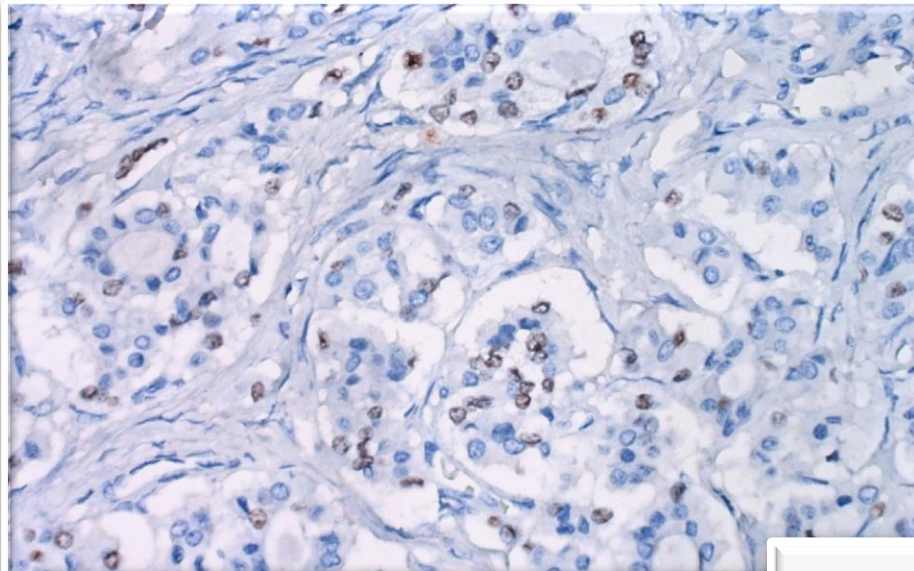
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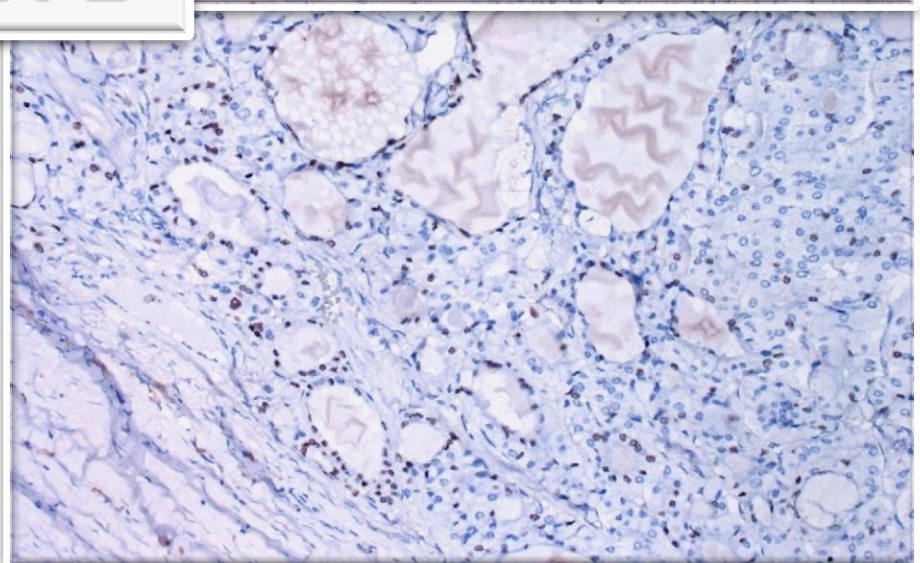
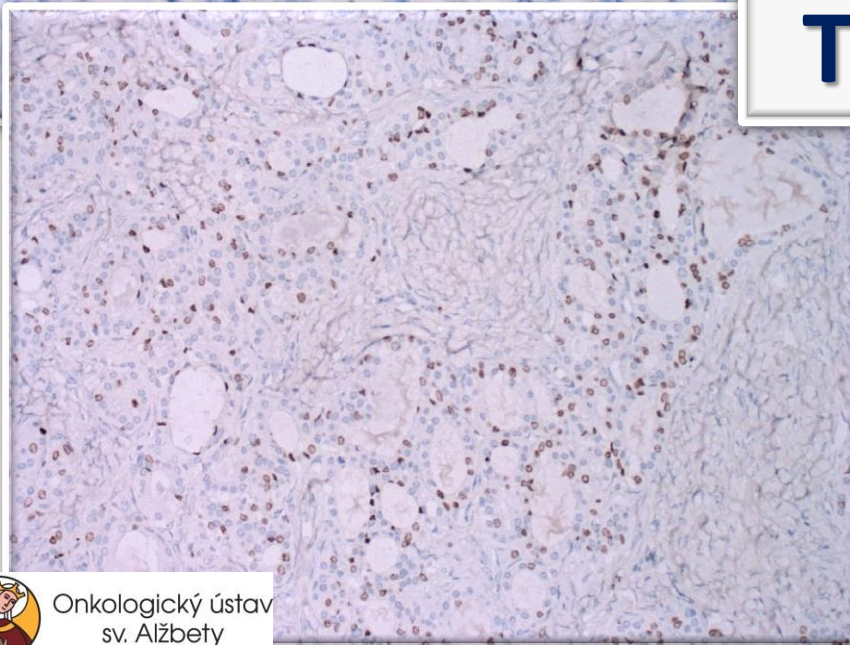


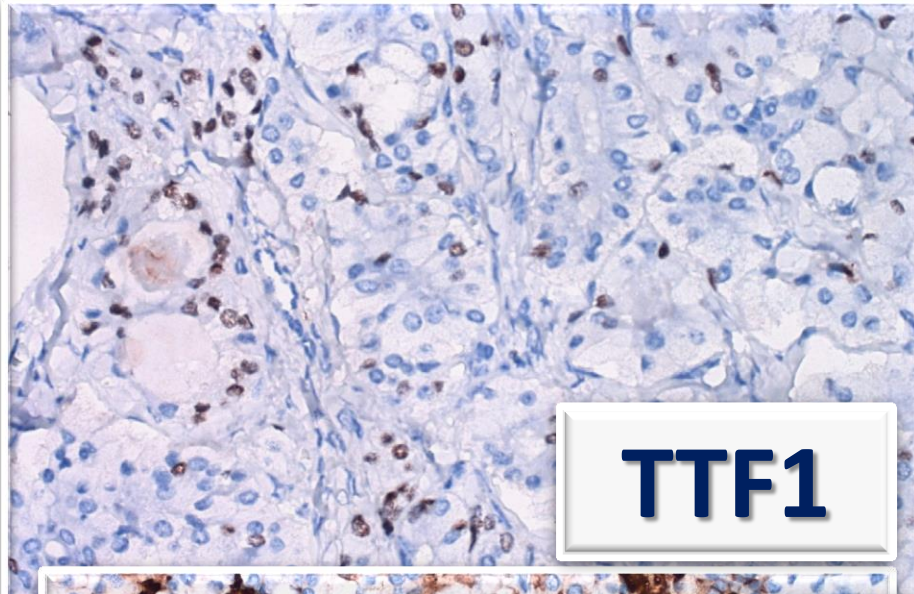
**$\alpha$  inhibín**



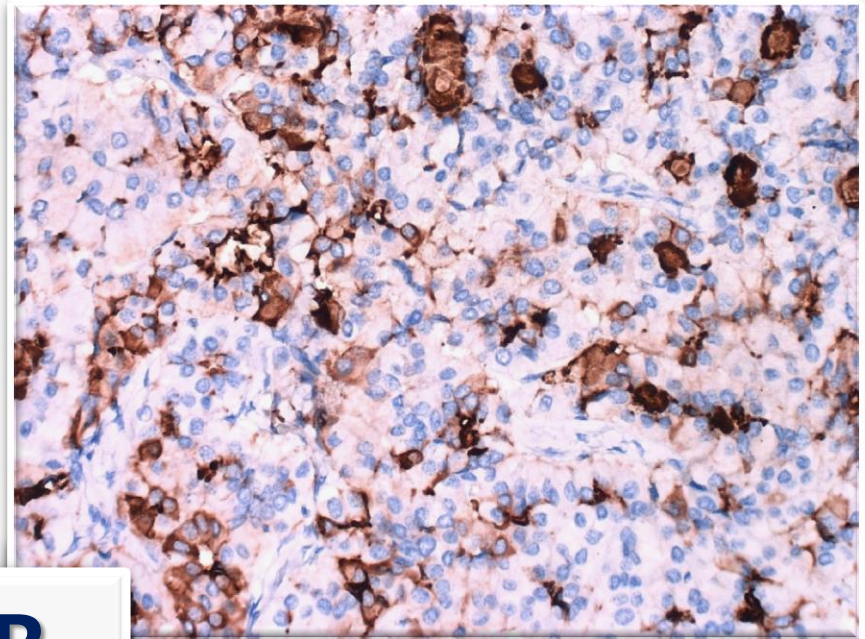


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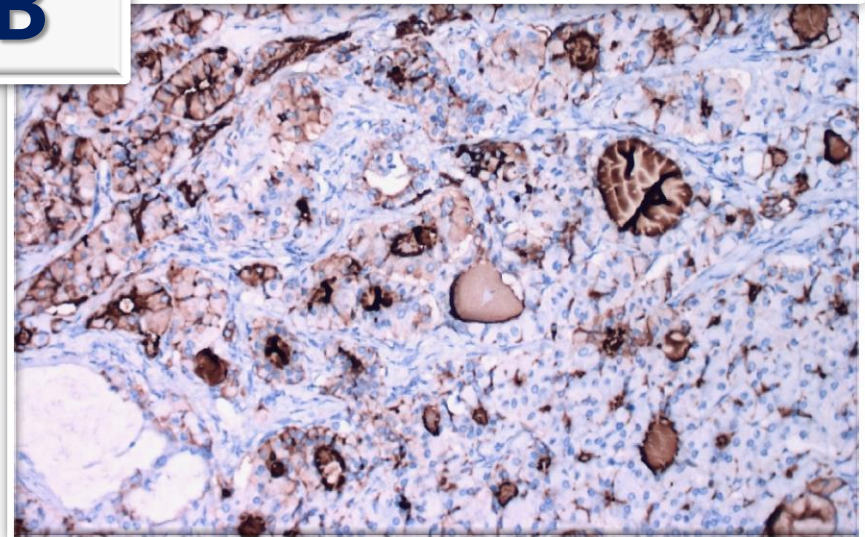
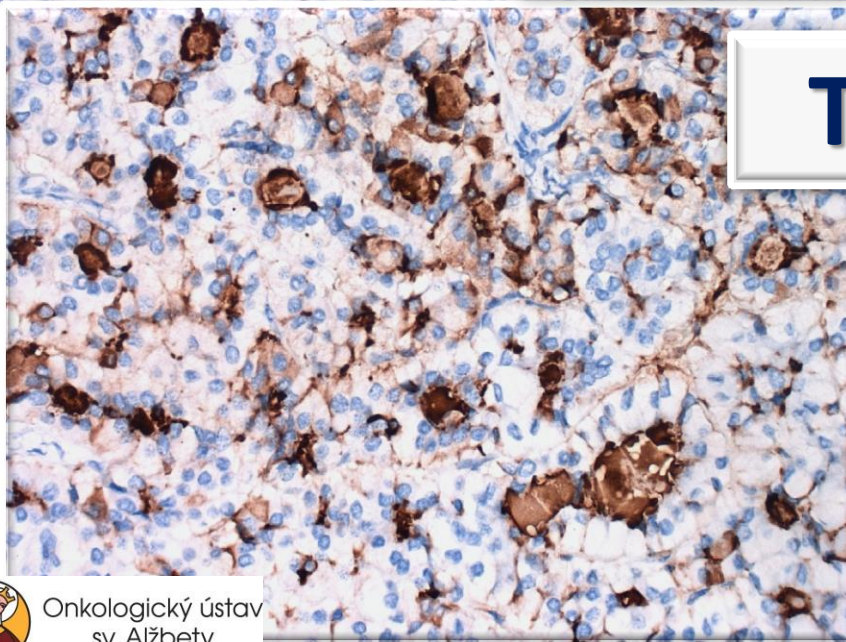


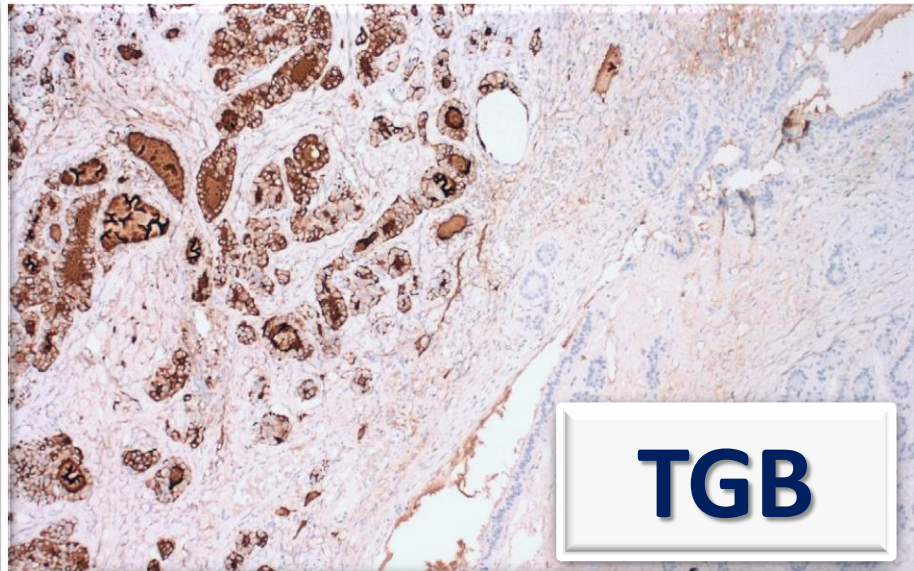


**TTF1**

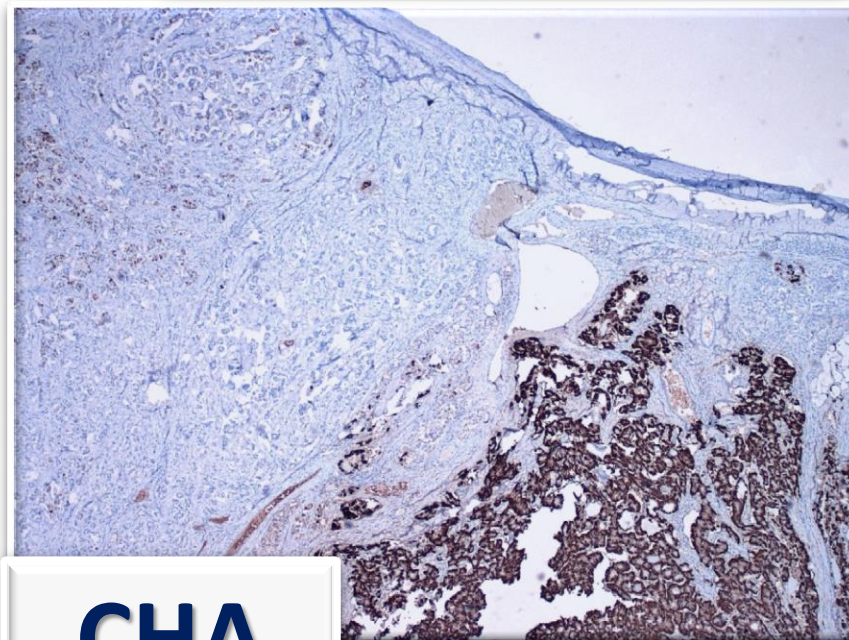


**TGB**

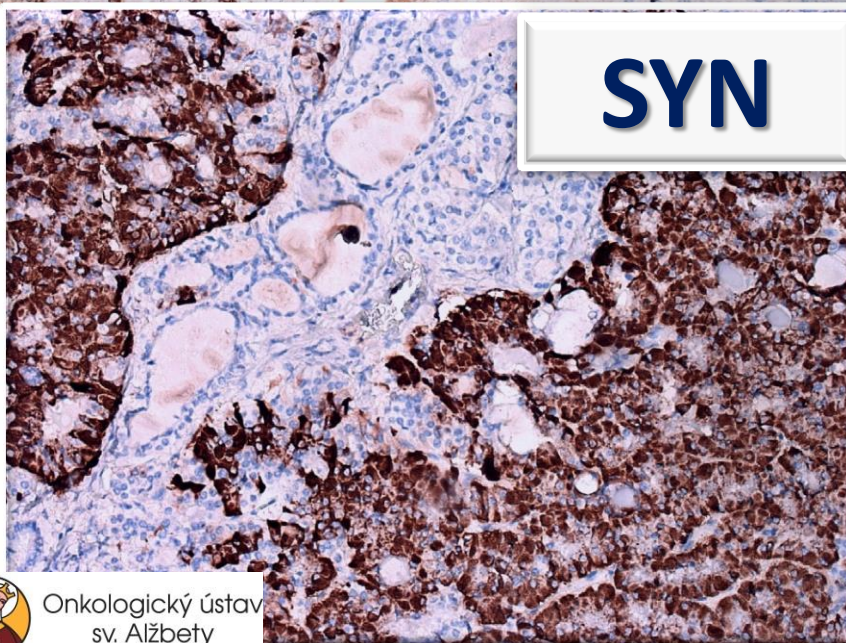




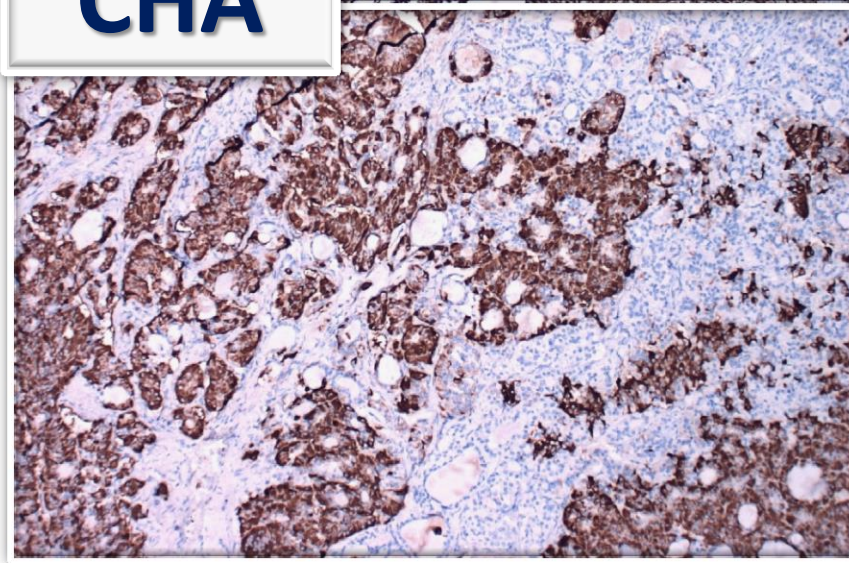
**TGB**

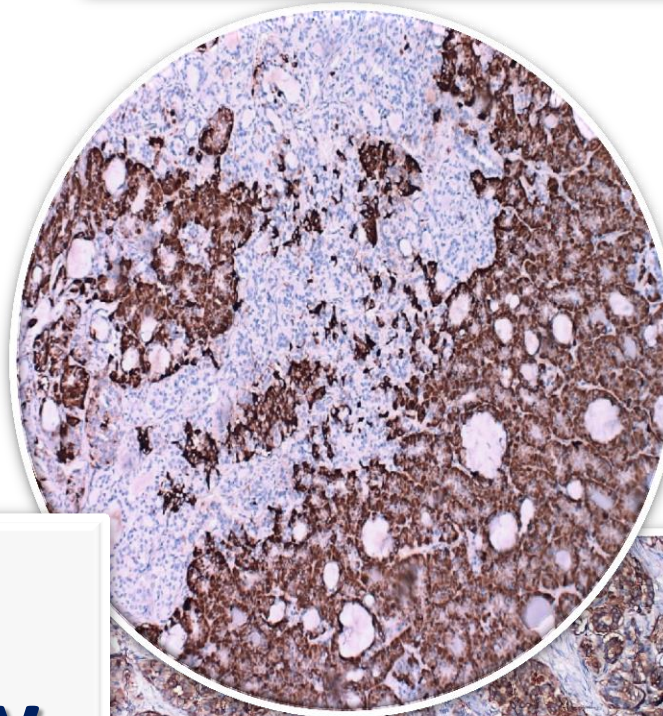
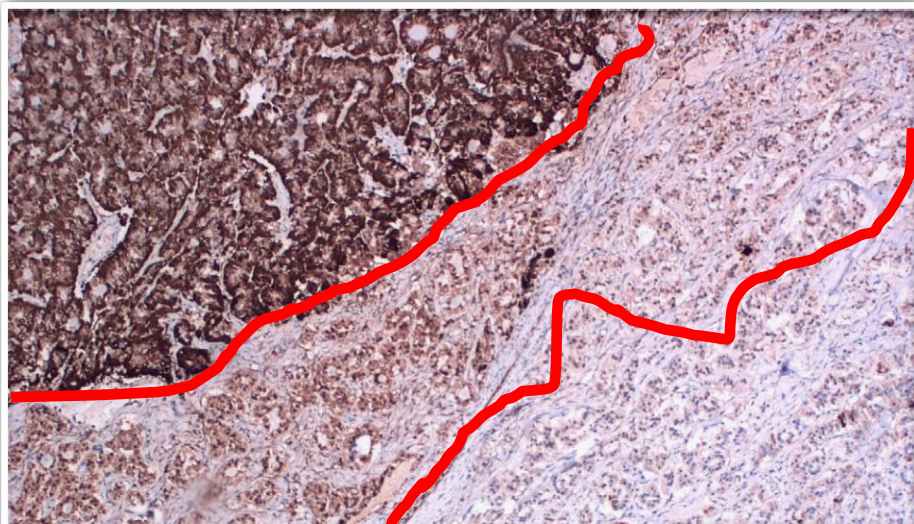


**CHA**

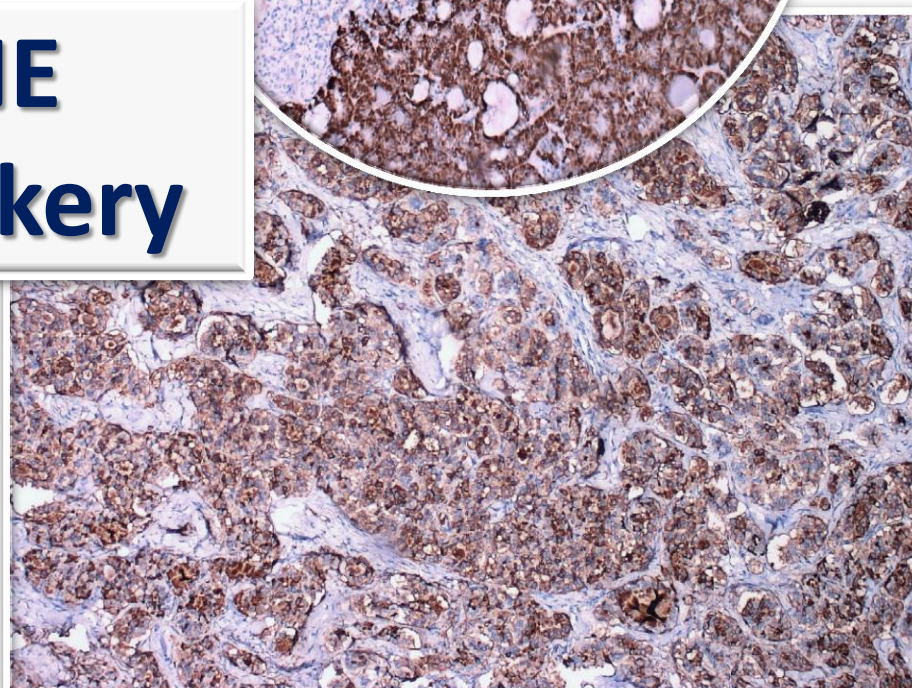
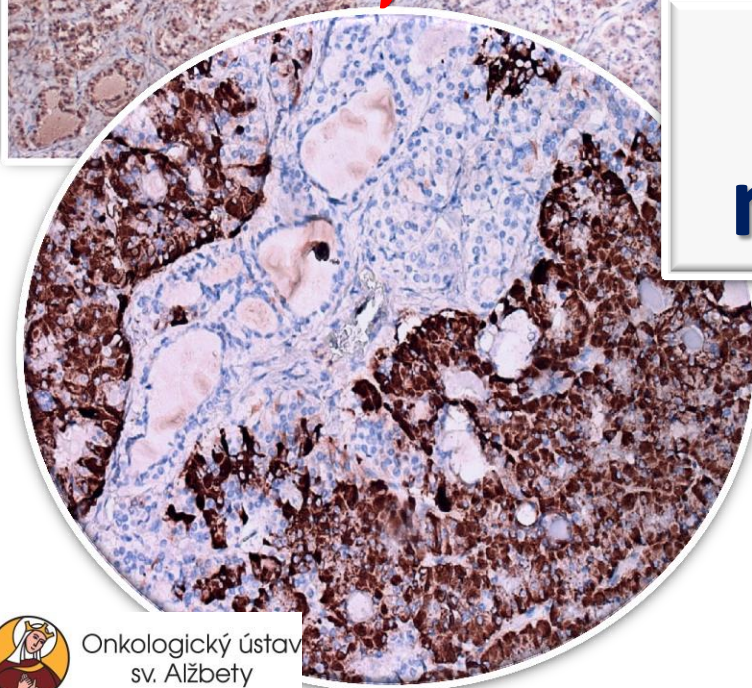


**SYN**



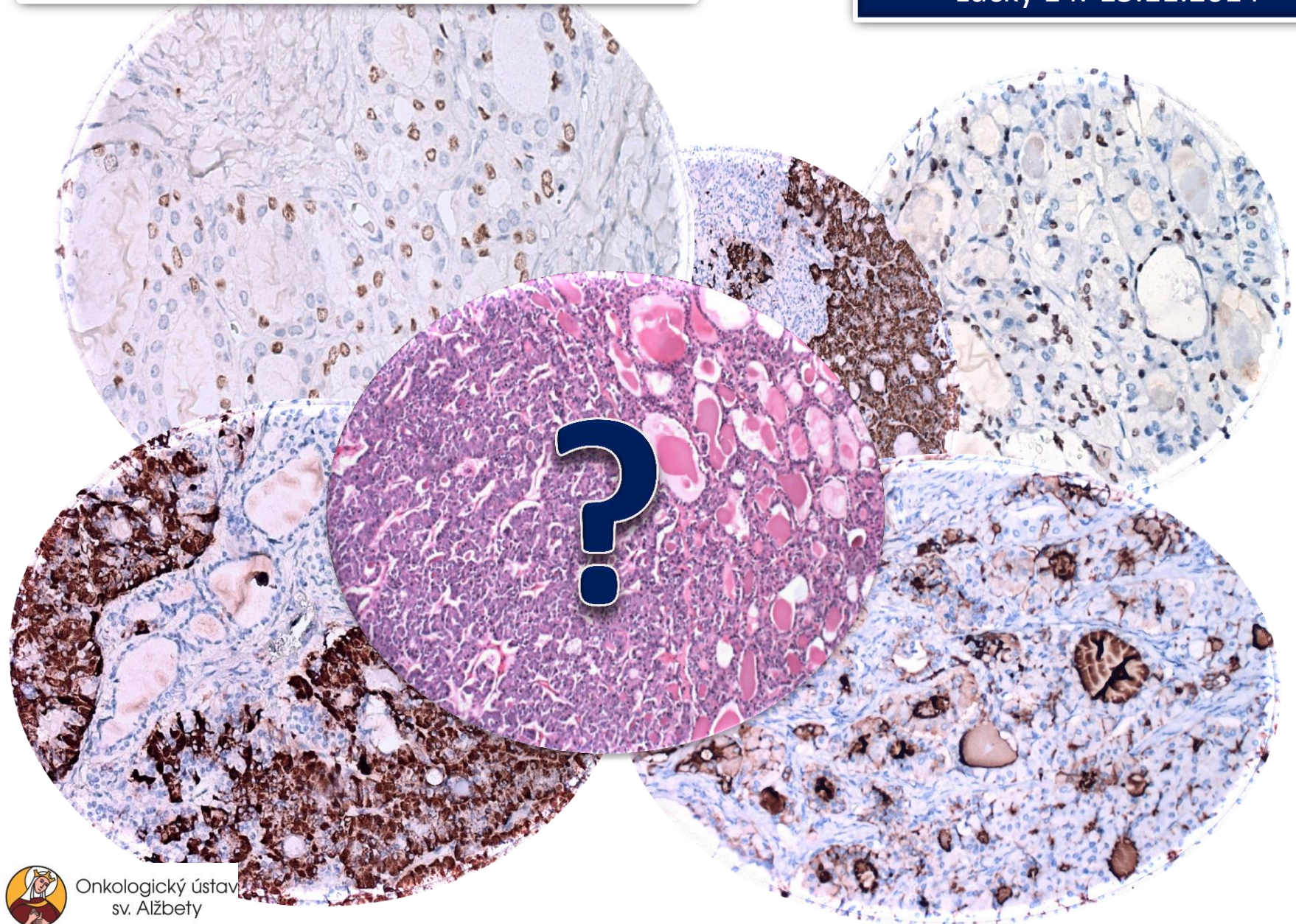


**NE  
markery**



# Prípád SD-IAP No. 528

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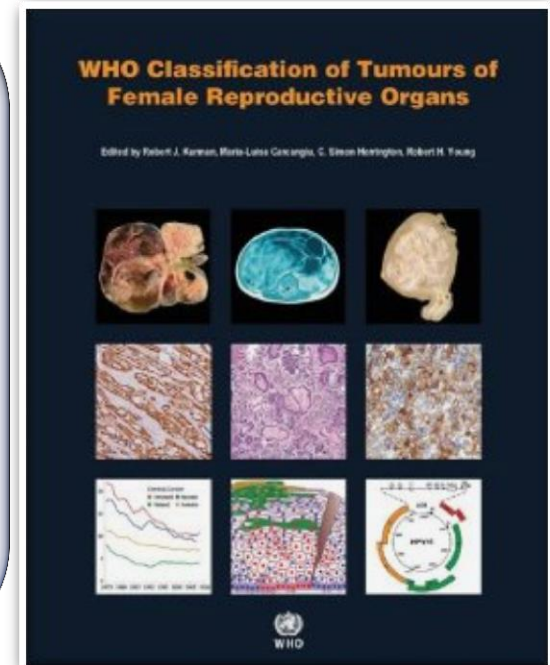
Marker	Folikulová	Trabekulárna+ inzulárna	Iná
CK7	+++	+	
TTF1	++	-	
TGB	++	-	
CHA	-/+	+++	
SYN	-/+	+++	
CEA	-	-	
Kalcitonin	-	-	
Alfa-inhibín	-	-	++
Ki67	0	1%	

## ZÁVER KONZULTÁCIE:

- podľa nášho názoru ide o zrelý cystický teratóm ovaria s nálezom tzv. **strumálneho karcinoidu (SK)** - asociácia struma ovarii a karcinoidu, ktorý je v dominantnom postavení (M:9091/1)

## DEFINÍCIA SK (SEC.WHO,2014):

- inzulárny alebo trabekulárny karcinoid asociovaný so struma ovarii
- dobre diferencovaný NET,G1???

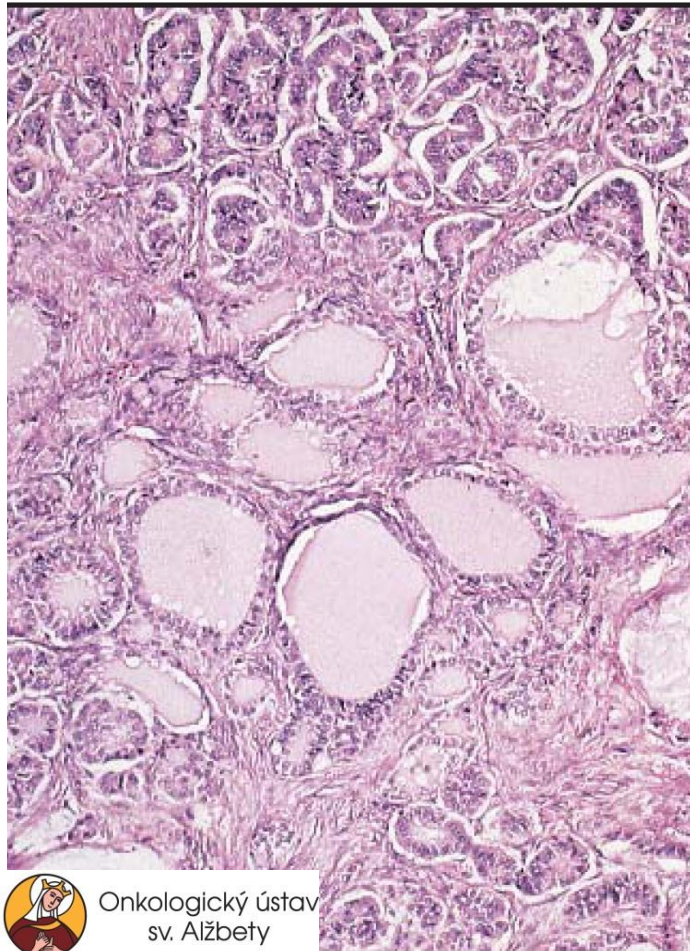


**Location**

**Neoplasm Type**

Ovary

- Surface epithelial tumors with neuroendocrine cells (mucinous, Brenner, endometrioid, serous)
- Sertoli-Leydig cell tumors with heterologous elements containing neuroendocrine cells, with or without carcinoid tumorlets
- Teratomas with neuroendocrine cells
- Insular carcinoid tumor
- Trabecular carcinoid tumor
- Strumal carcinoid tumor**
- Mucinous (goblet cell) carcinoid tumor
- Mixed or heterogeneous carcinoid tumors
- Small cell carcinoma, pulmonary type
- Undifferentiated carcinoma, non-small cell neuroendocrine type



Pathology Patterns Reviews

*Am J Clin Pathol* 2001;115 (Suppl 1):S94-S112

**Neuroendocrine Tumors of the Genital Tract**

John H. Eichhorn, MD, and Robert H. Young, MD

**Key Words:** Genital tract; Carcinoid; Small cell carcinoma; Large cell neuroendocrine carcinoma; Argyrophilic carcinoma; Merkel cell tumor



### Niekoľko faktov:

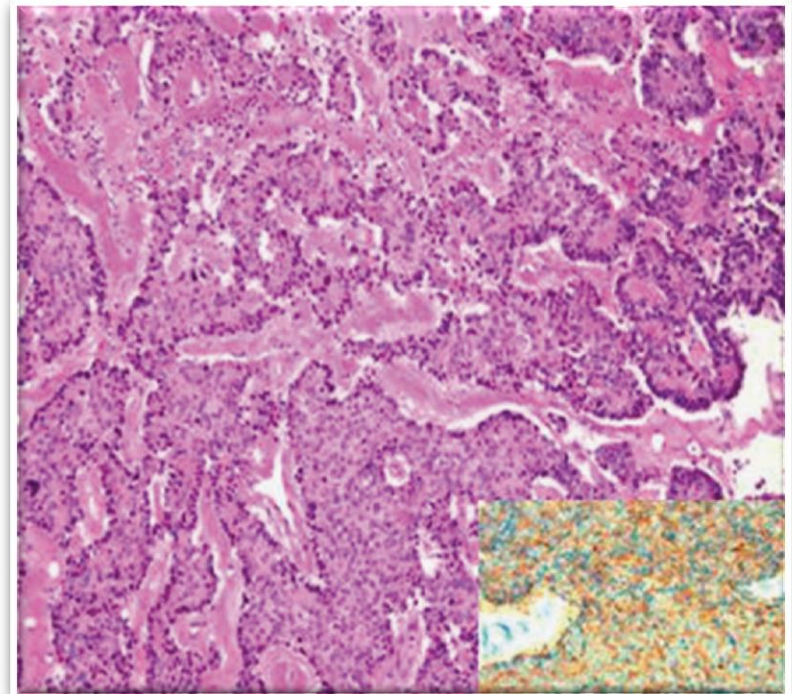
- ZCT = cca **20%** ovariálnych TU
- Malígna transformácia v ZCT = **0,17-2%** (80% = skvam.Ca)
- SO = **2%** ZCT (malígna transformácia v **5% SO / 0,1% ZCT**)
- primárny ovariálny karcinoid = **0,1%** všetkých ovariálnych Ca
- SK = 2.najčastejší karcinoid ovaria = obvykle ako kazuistiky, zatiaľ spracovaný v 3 štúdiách

Hindawi Publishing Corporation  
Case Reports in Obstetrics and Gynecology  
Volume 2012, Article ID 269489, 5 pages  
doi:10.1155/2012/269489

#### Case Report

### Malignant Transformation of a Mature Cystic Ovarian Teratoma into Thyroid Carcinoma, Mucinous Adenocarcinoma, and Strumal Carcinoid: A Case Report and Literature Review

Hilary D. Hinshaw,<sup>1</sup> Ashlee L. Smith,<sup>1</sup>  
Mohamed Mokhtar Desouki,<sup>2</sup> and Alexander B. Olawaiye<sup>1</sup>



## CHARAKTERISTIKY SK:

- Vek 21-77 rokov
- Veľkosť do 26 cm
- Vždy **unilaterálne**
- V 10% kontralaterálne **dermoidné cysty**
- **3/5 SK vzniká v dermoidnej cyste**
- 31% - fokálna **stromálna luteinizácia**
- **8% - známky steroidnej nadprodukcie** (endometrial hyperplasia, hirsutism, virilizmus)
- **8% funkčný thyreoidálny komponent, žiadna pct nemala karcinoidný sy**
- **jedno úmrtie v súvislosti s nádorom**, päť úmrtí bez súvisu s ochorením, prežívanie viac ako 5-10 rokov
- aj keď SK sa považuje za malígnu transformáciu strumálneho komponentu, ide o **benígne nádorové ochorenie**, stačí jednoduchá ovarektómia, resp.salpingo-ooforentómia

*Strumal Carcinoid of the Ovary:*

*An Analysis of 50 Cases of a Distinctive Tumor Composed of Thyroid Tissue and Carcinoid*

STANLEY J. ROBBY, MD, AND ROBERT E. SCULLY, MD

*Cancer 46:2019-2034, 1980.*



S. J. Robboy and R. E. Scully, "Strumal carcinoid of the ovary: an analysis of 50 cases of a distinctive tumor composed of thyroid tissue and carcinoid," *Cancer*, vol. 46, no. 9, pp. 2019–2034, 1980.

Pathology Patterns Reviews

*Am J Clin Pathol* 2001;115 (Suppl 1):S94-S112

### Neuroendocrine Tumors of the Genital Tract

John H. Eichhorn, MD, and Robert H. Young, MD

**Key Words:** Genital tract; Carcinoid; Small cell carcinoma; Large cell neuroendocrine carcinoma; Argyrophilic carcinoma; Merkel cell tumor

**Table 2**  
Carcinoid Tumors of the Ovary\*

	Insular	Trabecular	Strumal	Mucinous
No. of reported cases	75	30	80	19
Age (y)				
Range	31-79	24-74	18-78	14-74
Mean	57	45	47	44
Carcinoid syndrome	33%	None	1 case	None
Other syndromes	None	Constipation, hypoglycemia	Constipation, hypoglycemia, hyperthyroidism, MEN type 2A	None
Symptoms due to functioning stroma	None	1 case	4 cases	None
Unilateral (%)	100	100	100	100
Contralateral tumor of another type (usually dermoid)	17%	22%	10%	None
Peptide hormone(s)	7%	53%	42%	A few cases
Dense core granules	Pleomorphic, reniform, dumbbell	Small, round, uniform	Small, round, uniform	Small, pleomorphic
Stage I	100%	100%	98%	88%
Adhesions	17%	22%	25%	A few cases
Deaths	5 cases	1 case	1 case	2 cases

MEN, multiple endocrine neoplasia.

\*Compiled from a review of the literature.<sup>24-61</sup> Not every published study evaluated every feature.

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## Neuroendocrine Tumors of the Genital Tract

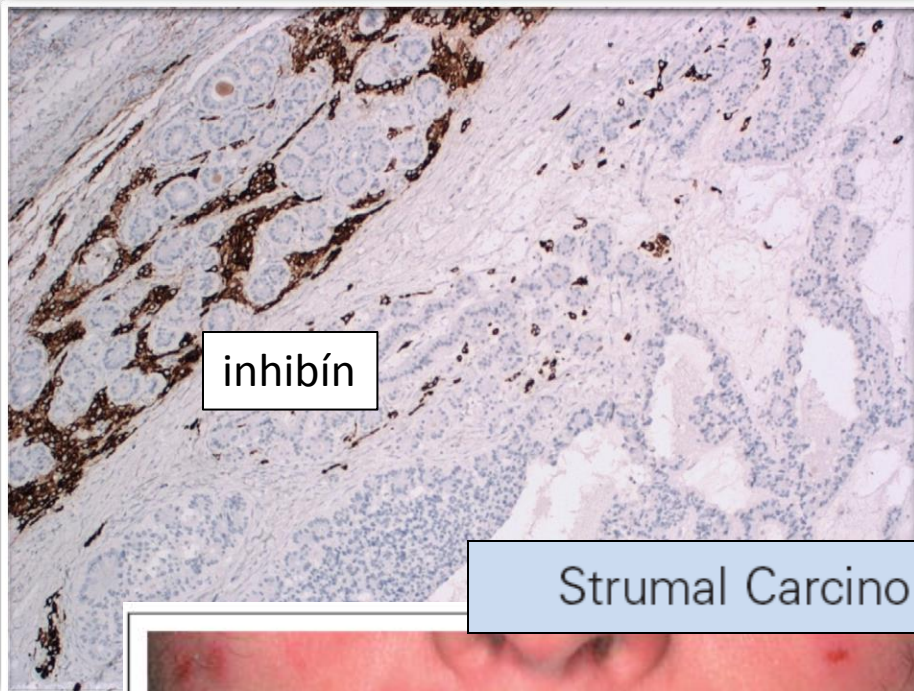
John H. Eichhorn, MD, and Robert H. Young, MD

Key Words: Genital tract; Carcinoid; Small cell carcinoma; Large cell neuroendocrine carcinoma; Argyrophilic carcinoma; Merkel cell tumor

	Struma
No. of reported cases	80
Age (y)	
Range	18-78
Mean	47
Carcinoid syndrome	1 case
Other syndromes	Constipation, hyperthyroidism, type 2A
Symptoms due to functioning stroma	4 cases
Unilateral (%)	100
Contralateral tumor of another type (usually dermoid)	10%
Peptide hormone(s)	42%
Dense core granules	Small, round, uniform
Stage I	98%
Adhesions	25%
Deaths	1 case

- PM ženy
- zriedkavo s karcinoidným sy
- obvykle iné peptidové sy
- jednostranné
- výborná prognóza

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inhibín

Strumal Carcinoid

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virilizmus





## Prezentácia SK



JSCR  
Journal of Surgical Case Reports  
<http://jscr.co.uk>

## Ovarian strumal carcinoid presenting as severe progressive constipation

**Authors:** G Kachhawa, S Kumar, G Singh, S Mathur, L Kumar, J Sharma

**Location:** All India Institute of Medical Sciences, New Delhi, India

Strumal carcinoid develops in a germ cell tumor characterized by an intimate mixture of thyroid and carcinoid. Unlike other carcinoid tumors, most patients with strumal carcinoid have no symptoms of carcinoid syndrome; few are reported to cause severe constipation. We report a case of a 60-year-old female patient presenting with severe progressive constipation and painful defecation for last few years. A right ovarian tumor was discovered during clinical examination. CT scan revealed a large lobulated solid cystic right adenexal mass suggestive of monomorphic teratoma, which was successfully removed surgically. The histopathology confirmed the diagnosis of strumal carcinoid tumor. Her constipation completely disappeared post surgery. These tumors are known to produce a biologically active substance like peptide YY which has a pharmacologic inhibitory action on intestinal motility. This was presumably the constipation in this patient rather than a mechanical effect of the tumor.



Prezentácia SK

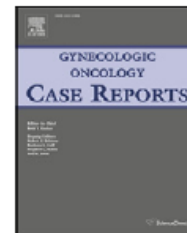
Gynecologic Oncology Reports 4 (2013) 9–12



Contents lists available at [SciVerse ScienceDirect](#)

## Gynecologic Oncology Reports

journal homepage: [www.elsevier.com/locate/gynor](http://www.elsevier.com/locate/gynor)



### Case Report

Primary strumal carcinoid tumor of the ovary: A pregnant patient exhibiting severe constipation and CEA elevation

Munekage Yamaguchi\*, Hironori Tashiro, Ken-ichi Motohara, Takashi Ohba, Hidetaka Katabuchi

*Department of Obstetrics and Gynecology, Faculty of Life Sciences, Kumamoto University, 1-1-1 Honjo, Chuo-Ku, Kumamoto-City, Kumamoto 860-8556, Japan*

**PYY** – inhibícia GI funkcie (↓sekrécia žalúdočnej šťavy, vyprázdňovanie žalúdka, TČ, produkcia solí v HČ, prechod do céka, produkcia pankreatickej šťavy, motilita jejuna a HČ).

Dve aktívne formy PYY (1-36; zvyšuje apetít a stimuluje hmotn.nárast) a PYY (3-36; fragmentovaná forma – opačný efekt)



## Strumal carcinoid tumour of the ovary presenting with severe constipation

*Suzanna Sulaiman<sup>1</sup>, MBChB, MRCOG, Yin Nin Chia<sup>2</sup>, MRCOG, DGO, Ramapadma Vathi Devi Namuduri<sup>2</sup>, MD, MRCOG*

**ABSTRACT** A 30-year-old single woman presented with an incidental finding of abdominal mass associated with severe constipation. Her cancer antigen-25, alpha-foetoprotein and beta human chorionic gonadotropin levels were normal, but her carcinoembryonic antigen level was raised at 7.6 g/dL. Magnetic resonance imaging showed a 11.4 cm × 8.6 cm × 9.5 cm right ovarian mass with solid and cystic areas. An open right cystectomy was performed. Intraoperatively, she was found to have hirsutism and clitoromegaly. During the operation, there was a right ovarian 10-cm mass, with faecal loading from the caecum to the transverse colon. The uterus, fallopian tubes, left ovary and intraperitoneal survey were normal. Final histology confirmed strumal carcinoid tumour Stage 1A. This case report shows that a strumal carcinoid tumour can present with longstanding constipation as a patient's main complaint and may also be associated with hirsutism.

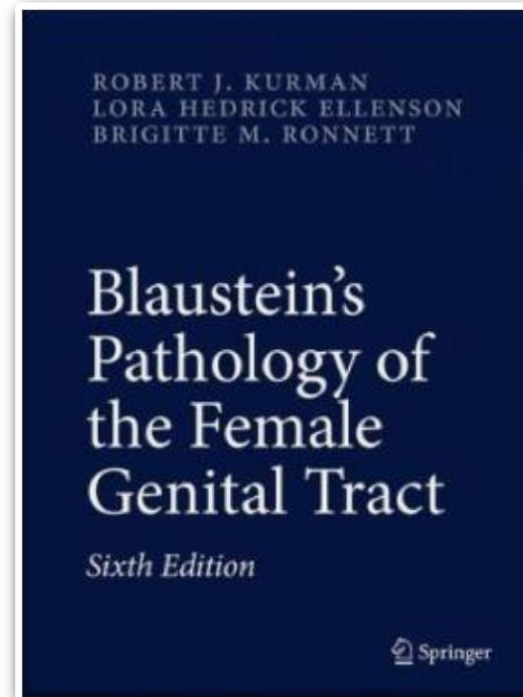
*Keywords: constipation, ovary, strumal carcinoid tumour*  
*Singapore Med J 2013; 54(1): e21–e23*

In conclusion, this case report shows that strumal carcinoid ovarian tumour should be considered as a differential diagnosis in female patients who present with an abdominal mass that is associated with constipation and hirsutism.



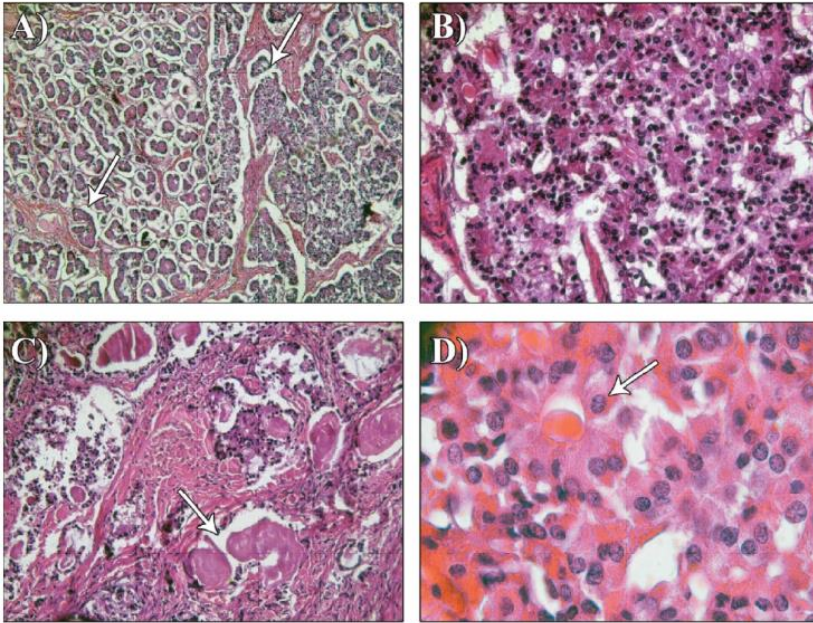
## OSTATNÉ SYMPTÓMY

- v **10%**, resp. v **25%** SO+SK známky hyperthyreoidizmu ( $\approx 5\%$  thyreotoxikóza)
- 1/6 SO = má strumu
- predoperačne jód = vychytávanie v panve
- postoperačna hypothyreóza
- hypoglykémia + kožná melanóza



Ashton MA (1995) Strumal carcinoid of the ovary associated with hyperinsulinemic hypoglycemia and cutaneous melanosis. *Histopathology (Oxf)* 27:463–467





**DIF. DG.:**

- GCT
- MTS NEN do ovária
- Ca vzniknutý v struma ovarii
- MTS FK do teratómu???

Iranian Journal of Pathology (2014) 9 (4), 285 - 290

## Case Report

### Primary Strumal Carcinoid Tumor of the Ovary: a Case Report

Nahid Ghanbarzadeh<sup>1</sup>, Mohammad Nadjafi-Semnani<sup>2</sup>,  
Zohreh Azarkar<sup>3</sup>, Fatemeh Haghighi<sup>4</sup>, Ali Nadjafi-Semnani<sup>5</sup>



Pathology Patterns Reviews

**Neuroendocrine Tumors of the Genital Tract**

John H. Eichhorn, MD, and Robert H. Young, MD

Key Words: Genital tract

*Am J Clin Pathol* 2001;115 (Suppl 1):S94-S112

**Primary vs Metastatic Insular (Midgut) Carcinoid Tumors in 35 Cases\***

	Primary	Metastatic
Preoperative carcinoid syndrome	33	40
Recurrent elevated 5-hydroxy-indoleacetic acid at 6 mo	0	75
Extraovarian primary tumor at operation	0	76
Extraovarian metastases at operation	0	92
Bilateral ovarian tumors	0	96
Teratomatous elements and carcinoid in same ovary	76	0
Distribution in ovary	Homogeneous	Multinodular
Amount of stroma	Small	Large
Vascular invasion	Rare	Common

Acta Clin Croat 2012; 51:649-653

Case Report

## STRUMAL CARCINOID OF THE OVARY: REPORT OF TWO CASES\*

Tanja Leniček<sup>1</sup>, Davor Tomas<sup>1,3</sup>, Hrvojka Soljačić-Vraneš<sup>2</sup>, Zdenko Kraljević<sup>2</sup>, Petar Klarić<sup>2</sup>, Milan Kos<sup>4</sup>  
and Marina Kos<sup>1,3</sup>

the surgery. Strumal carcinoid can also be responsible for carcinoid heart disease<sup>7</sup>. In the largest reported series of strumal carcinoids consisting of 50 patients, 8% of the patients exhibited clinical signs of androgen production and virilism, and no patient had carcinoid syndrome<sup>2</sup>. None of these symptoms was present in our patients.



Prečo by sme mali robiť osvetu?



European Society for Medical Oncology

**Struma ovarii malignum (or strumal carcinoid) is a malignant\* tumour** that arises within a teratoma\* and that consists of more than 50% of tissue that is typically found in the thyroid gland\*. Struma ovarii malignum is very uncommon and is usually diagnosed as an incidental finding in 50- to 60-year old women. It rarely produces metastases\*. **Very rarely, the ovarian tumour represents a metastasis from a primary thyroid malignant tumour, and this possibility should therefore be investigated in patients presenting strumal carcinoid.**





Case Report

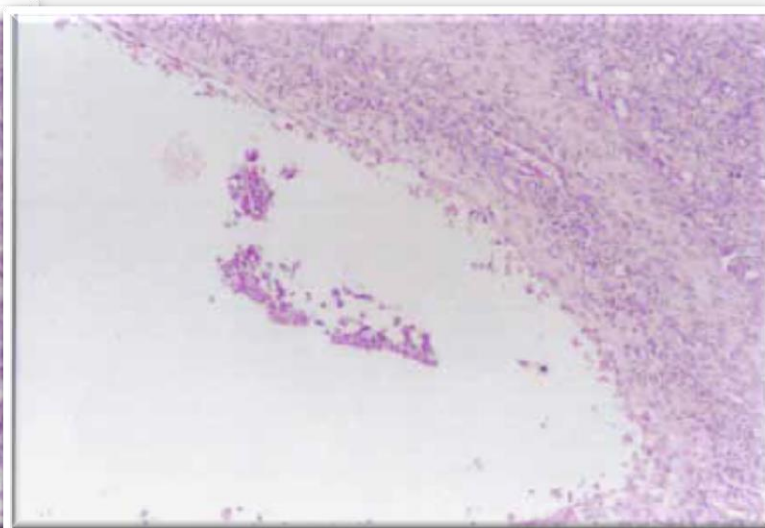
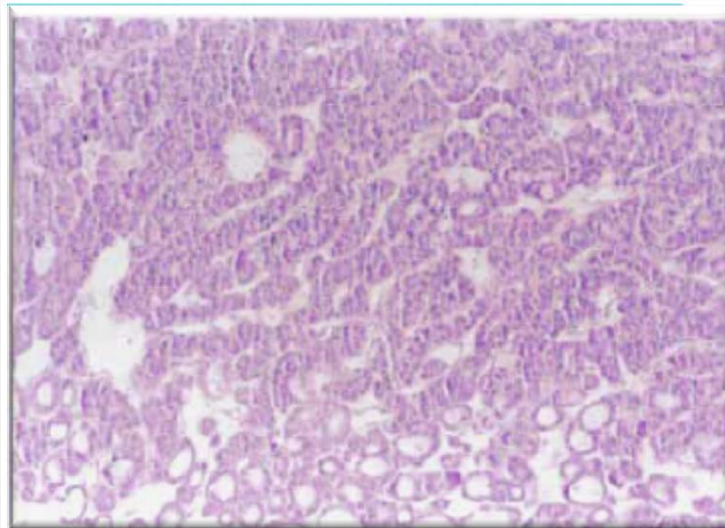
**Malignant follicular thyroid carcinoma arising in struma ovarii: A case report and review of the literature**

Bulent Yilmaz<sup>1,2</sup>, Hayri Aksut<sup>1</sup>, Tayfun Gungor<sup>2</sup>, Mengu Turker Tug<sup>3</sup>, Leyla Mollamahmutoglu<sup>2</sup>

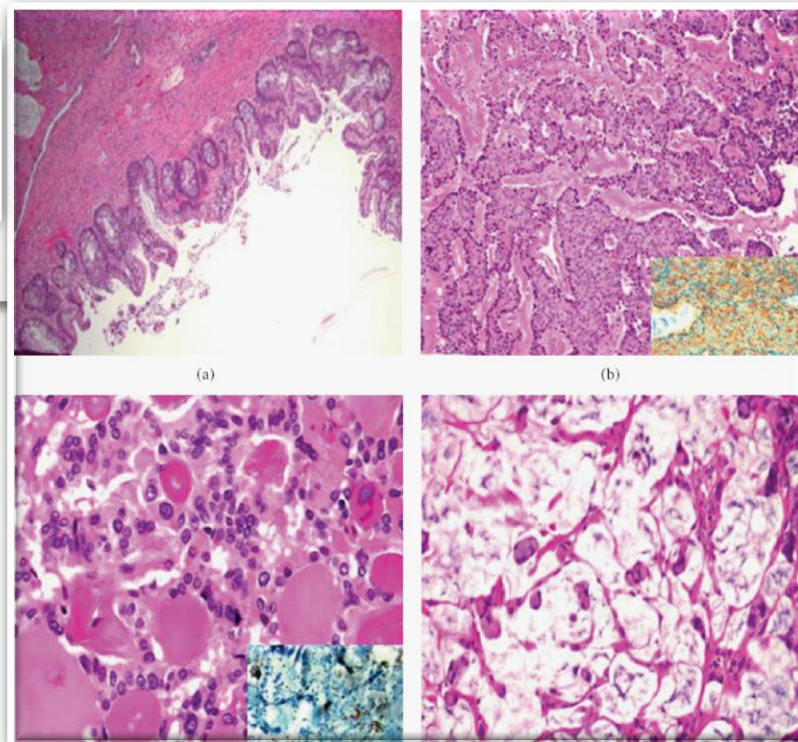
<sup>1</sup>Department of Obstetrics and Gynecology Izmir Katip Celebi University, School of Medicine

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A second review of 150 patients with primary ovarian carcinoids published in 1984 also concluded that these metastasize only occasionally and should be treated as ovarian tumors of low malignant potential [8].



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doi:10.1155/2012/269489

## *Case Report*

# **Malignant Transformation of a Mature Cystic Ovarian Teratoma into Thyroid Carcinoma, Mucinous Adenocarcinoma, and Strumal Carcinoid: A Case Report and Literature Review**

Hilary D. Hinshaw,<sup>1</sup> Ashlee L. Smith,<sup>1</sup>  
Mohamed Mokhtar Desouki,<sup>2</sup> and Alexander B. Olawaiye<sup>1</sup>



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<http://dx.doi.org/10.4236/ojog.2013.37A1001> Published Online September 2013 (<http://www.scirp.org/journal/ojog/>)

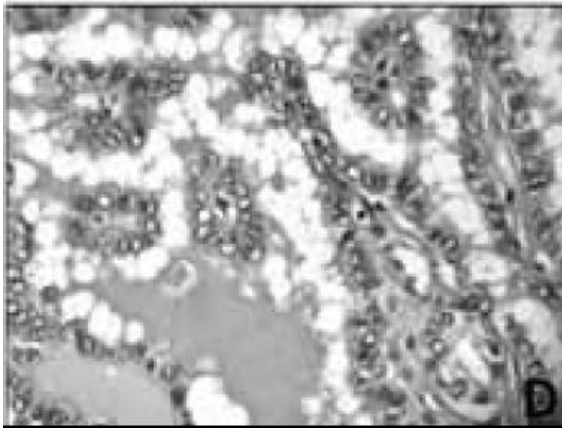
OJOG

## **Intra-operative consult for cystic struma ovarii—An experience in an academic medical center: A study of 53 cases over 21 years**

M. Ruhul Quddus\*, Jinjun Xiong, S. M. K. Nahar Begum, Michele Lomme, Katrine Hansen, C. James Sung, W. Dwayne Lawrence

- **3x strumálny karcinoid**
- **obvykle solídne partie**
- **dá sa predpokladať v peroperačnej biopsii?!**





CASE REPORT

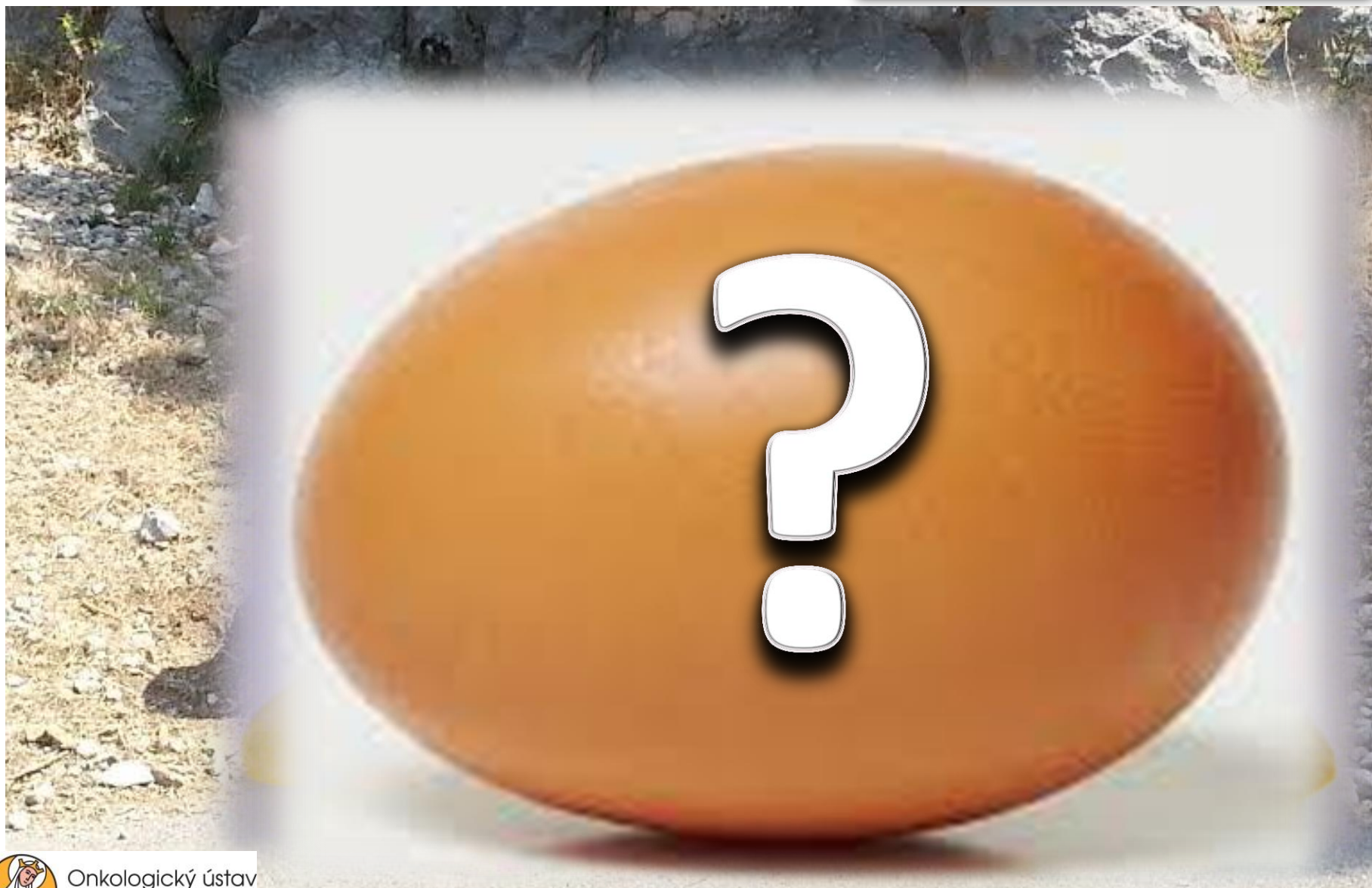
J Bras Patol Med Lab, v. 49, n. 2, p. 126-129, abril 2013

Papillary thyroid carcinoma in ovarian strumal  
carcinoid tumor: case report

*Carcinoma papilífero de tireoide em tumor carcinoide strumal de ovário: relato de caso*

Ana Paula Percicote<sup>1</sup>; Sérgio Bruno Bonatto Hatschbach<sup>2</sup>; Sérgio Ossamu Ioshii<sup>3</sup>;  
Tiago Jacometo Coelho de Castilho<sup>4</sup>; João Augusto Bahr<sup>5</sup>; Camila Gadens Zamboni<sup>6</sup>

The origin of the thyroid tissue and carcinoid tumor components of these tumors is controversial. Some authors suggest the correlation of carcinoid tumor, C cells and thyroid medullar carcinoma. Based on ultrastructural evidences, other investigators assume the existence of hybrid cells with differentiation for thyroid and neuroendocrine cells similar to those found in carcinoid tumors derived from posterior intestine<sup>(6, 10)</sup>. These findings are corroborated by morphological and immunohistochemical aspects such as positivity for PSAP, frequent among carcinoid tumors found in the posterior intestine<sup>(6)</sup>.



Podakovanie prim. MUDr. Cibičkovi



Vážený pán docent,

- píšem Vám vo veci pani L.S., prípadu vybratého na Martinský bioptický seminár. Pacientka sa má dobre, ale až dnes pred obedom bude vyšetrená na CT-prístroji. Výsledok Vám ihneď oznámim.

Srdečne Vás pozdravuje

J. Cibiček

Oddelenie patológie

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- **CT hrudníka, brucha a malej panvy, natív + kontrast:**
- Axilly bpn. ; Pľúcny parenchým nevykazuje ložiskové zmeny; Pleurálne listy nezhrubnuté. Pleurálne dutiny bez voľnej tekutiny; Mediastinálne štruktúry v anatomickom postavení. Patologicky zväčšené LU v mediastíne nevidno. Pečeň nezväčšená, štruktúra pravidelná, bez evid. lož. zmien. Žlčník a žlčovody bpn. Slezina nezväčšená, homogennej štruktúry, ložiskové zmeny nevidno. Pankreas nezväčšený, ostro ohraničený, štruktúra pravidelná. Nadobličky nezväčšené. Obličky vykazujú normálny CT obraz. Dilatáciu DS nevidno. Vylučovanie v norme, zhotovené aj CT urogramy, uretery bez dilat., jemné voľné. Močový mechúr dobre naplnený.
- **V anamnéze v NIS je uvedené stav po HYE a ADX bilat. (na žiadanke nie je uvedené vôbec), vpravo sa zobrazuje ale obdobné ložisko akoby ovárium, resp. sa môže jednať o recidívu, veľkosti 36x28 mm. Inak iné patolog. zmeny nevidno.**
- **Patologicky zväčšené LU nevidno.** Voľnú tekutinu v zobrazenej časti dutiny brušnej nevidno.
- **Skelet bez zn. mts.**
- **Záver: Ovárium? Recidíva TU ovária? vpravo - nejasná anamnéza. Dop. MR vyš. p.p.**