

Ovarian Tumors with Brain Tissue, Teeth or Hair (Not Unheard Of)



By Jamie Wells, M.D. — January 7, 2017

Things aren't always what they seem – especially in the medical realm. That's precisely what surgeons in Japan discovered when performing an emergency appendectomy. Brain tissue ... in ovaries?!



Credit: Shutterstock [1]

Things aren't always what they seem. Why should this colloquialism be any different in the medical realm?

Incidental findings are rather commonplace. Meaning: When exploring one diagnostic avenue for a symptom, another existing often more significant issue presents itself unrelated to the initial event.

This is exactly what has been reported by the Japanese Society of Neuropathology. [In a recent published case report](#) [2], the authors describe an adolescent female who—while undergoing an emergency surgery for appendicitis— was discovered to have large, bilateral, mostly cystic ovarian masses (aka tumors).

Three months later they were removed. The mature cystic teratoma of her ovary contained very highly organized and well-differentiated brain and brainstem tissue along with greasy material and hair. Portions included structures that mimicked cerebellar features and brain stem segments. A thin bone encasing it resembled elements of a skull.

This patient presented with no neurologic symptoms and did well—being lost to follow-up after three years.

Teratomas with CNS (aka central nervous system) components have previously occurred and been reported. In this case, however, there were certain findings that were super arranged to approximate aspects of the adult brain.

Teratomas often consist of one or more of the germ layers. Cystic mature teratomas are most commonly benign. In rare instances, they can be malignant (eg. immature versions). The former is often routinely called a dermoid cyst, but there is a nuanced distinction that is less relevant for the purposes of this article. [Click here for an extensive review on all forms if interested.](#) [3]

They can appear in the ovary or testicle or in extra-gonadal locations. The growths can include skin, fat, thyroid/endocrine, cartilage, teeth, and connective tissue elements, for example.

Though mainly benign, they can cause secondary problems depending on their location and the impact of the contents themselves. Though the ovarian ones can appear at any age, prevalence is highest during the reproductive years.

Since we are focusing here on ovarian teratomas, the enlarging weight effect on the ovary can cause it to twist and untwist on itself. The dreaded complete ovarian torsion can result by serving to diminish blood supply to that ovary and, unfortunately, by the time symptoms appear and without temporally-urgent surgical correction the life of the ovary can be at risk.

“Pain out of proportion to exam” is the classic description of an ovarian torsion. But, presentation of the teratoma can be variable which can often be attributed to its size. Many are discovered by accident like this case or with abdominal pain. Less frequently from hip or back or belly discomfort, for instance.

Also, less commonly, they can rupture in particular if large or upon resection complication which allows the contents to aggravate and possibly infect the abdominal contents. When sudden especially, bleeding, shock and inflamed peritoneum (aka abdominal contents) can be a consequence.

For obvious reasons, males present sooner with a testicular torsion since the organ is outside of the body. Time is of the essence to operate, so the testicle may fare better than the ovary since these traditionally present earlier in men when symptomatic (or asymptomatic by simple palpation).

Additionally, the tumor can become malignant—but, this is extremely rare (0.2-2%). (1)

A recently described type of encephalitis (aka inflammation of the brain) has been associated with mature ovarian teratomas. The syndrome presents with viral symptoms followed by neurological impairment ranging from psychosis to seizures. (2) This is further underscored in the Japanese study which articulates such a syndrome was absent in their patient, but prior published work reveals that the CNS tissue in these tumor types plays a part in the development of the autoantibody that prompts this brain disorder. Their patient had no neurologic findings.

Teratomas are just one form of neoplasm (aka new or abnormal growth) where features from their standard site appear elsewhere. Neuroendocrine tumors can materialize anywhere causing

displaced symptoms. An ectopic thyroid, for instance, is one that appears outside of its usual anatomical place.

The human body is a wondrous machine that can accommodate a great deal of transformations and adaptations. Thankfully, the amazing strides in modern medicine allow us to intervene—often successfully— when development, maturation or degeneration run astray.

Sources:

(1), (2) Hamilton, Chad et al. [Cystic Teratoma](#) [3]. Medscape emedicine- Oncology. April 16, 2015.

Shintaku, M et al. [Well-formed cerebellum and brainstem-like structures in a mature ovarian teratoma: Neuropathological observations](#) [2]. Japanese Society of Neuropathology. January 2, 2017.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Source URL: <https://www.acsh.org/news/2017/01/07/ovarian-tumors-brain-tissue-teeth-or-hair-not-unheard-10694>

Links

[1] <http://www.shutterstock.com>

[2] <http://onlinelibrary.wiley.com/doi/10.1111/neup.12360/abstract>

[3] <http://emedicine.medscape.com/article/281850-overview>