Cystoscopy or the passage of bougies under uncombined thiopentone anaesthesia has in my experience often produced difficulties resolved by the addition of gas-oxygen, and the inference seems to be that the sphincters may also be involved in a spastic process during such anaesthesia, which in these cases is also best combined with inhalation agents.

It is curious that these by no means rare signs should occur with a drug often used to combat convulsions; and in this connexion the hypothesis of Williams and Sweet (1944) seems to be pertinent. In considering anaesthetic convulsions in general, they adduce the probability of a constitutional factor, and suggest that in every case a convulsion is "primarily due to an inborn but latent epileptic liability . . . factors which arise during anaesthesia being merely precipitants of the convulsions." Encephalograms of patients known to have had convulsions during anaesthesia show irregularities supporting this hypothesis. Given the existence of such a type of patient, it should not be too much to suppose that the sudden addition of any potent drug to the blood stream might well act as a "precipitant."

Summary

The convulsant possibilities of thiopentone might be suspected, having regard to its near relationship to other strongly convulsant drugs.

The most common phenomena associated with these properties of the drug are: (a) pronatory movements of the arm, sometimes progressing to (b) strong shuddering movements, and even to (c) clonic spasm of other muscles, mostly those associated with respiration, either normal or forced. Tonic spasm of the glottis or of the entire thoracic musculature is not uncommon, and the sphincters also sometimes seem to be involved in the process.

The time factor suggests that no other exciting agent than the drug itself is responsible for their occurrence; but there is a possibility that an inborn convulsive tendency in the patient may predispose to their appearance.

The onset of convulsive phenomena is favoured by absence of premedication, uncombined thiopentone anaesthesia, and repeated thiopentone anaesthesia.

Convulsive signs are most likely to occur in muscular highly trained males leading an open-air life.

They are easily prevented or ablated by omnopon-scopolamine premedication and early addition of gas-oxygen in 25% or other suitable mixture.

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GRANULOSA-CELL TUMOUR OF OVARY AS ACUTE ABDOMINAL EMERGENCY

BY

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Granulosa-cell tumours of the ovary are usually recognized as a result of their effect on the endometrium, but like other ovarian neoplasms they may give rise to acute surgical complications.

Case Report

A female patient aged 48 years was admitted to hospital complaining of acute abdominal pain of some twelve hours' duration. She had had no previous illnesses. For the last three months she said she had "not been feeling too well," and for the last twelve days she had had a diffuse lower-abdominal pain of a moderately severe nature. There had been no definite colic. During the past five days the pain had become localized in the right iliac fossa and had become more constant; it radiated into both loins. Lying in bed

gave some relief. There had been no nausea and no vomiting. The bowels were regular and micturition normal. The menopause had occurred at the age of 44, and since that date the patient had had no vaginal bleeding. She had two children aged 18 and 12 years, and there had been one miscarriage thirteen months before the birth of her eldest child.

On examination the tongue was moist and had a white fur. The abdomen moved freely on respiration. Tenderness and muscle-guarding were present in the right iliac fossa. Vaginal examination revealed tenderness in both fornices, more marked on the right side. Pain was complained of on moving the cervix. The uterus was slightly increased in size. The condition was diagnosed as subacute appendicitis and operation advised.

A split-muscle incision was made. On opening the peritoneal cavity a considerable quantity of blood was evacuated. The exposure was considered to be unsatisfactory, so a further midline incision was made. About 1 pint (568 ml.) of blood and clot was evacuated from the pelvis. An ovarian neoplasm of moderate size was delivered, with blood clot extruding from two places in its capsule. Salpingo-oophorectomy was performed. The uterus and left ovary appeared to be normal. The patient had an uneventful convalescence.

Comment

The specimen consisted of a tumour measuring $9 \times 7 \times 5$ cm. and having a thick whitish capsule, which in places showed a yellowish colour owing to the tissue deep to it. It had ruptured at two points, and blood clot was protruding from these ruptures.

A portion of Fallopian tube was adherent to the tumour at one point. The cut surface showed a uniform whiteness, but with areas of haemorrhage. On section a dense fibrous capsule resembling ovarian stroma was seen. No follicular elements were present, the tumour consisting of sheets of oval cells lying in a loose stroma rich in blood vessels. In places the cells had an acinar arrangement, but nowhere was there follicular formation. In a few areas there were vacuolated cells resembling Call-Exner bodies. There was a considerable degree of necrosis and interstitial haemorrhage. The appearances were those of a granulosa-cell tumour of the diffuse type.

The granulosa-cell tumour is one of the solid gonadal tumours of the ovary in which the cell elements resemble the granulosa cells of the normal Graafian follicle and has the ability to secrete an oestrogenic hormone. The tumours are almost invariably unilateral, maintain the shape of the ovary within a firm fibrous capsule, and vary in weight from a few grammes to several kilograms. The cut surface is a soft whitish pink with yellow zones, sometimes partly cystic, and occasionally there are areas of haemorrhage. Histologically three main types are recognized according to the degree of glandular-tissue differentiation—follicular, trabecular, and diffuse—and as a general rule the least differentiated tumours show the least hormonal activity. In those tumours with oestrogenic properties the uterine endometrium is of the hyperplastic, non-secretory type with cystic dilatation of the gland tubules. Tumours showing evidence of malignancy are extremely rare. The pathology has been well summarized by Harvey, Dawson, and Innes (1939).

Although haemorrhage into a granulosa-cell tumour of the ovary is common, I cannot find any previous report of a case associated with so severe a degree of haemoperitoneum. The fact that the haemorrhage had been severe enough to burst through a capsule so thick as the one in this case shows the severity of the bleeding. There was no evidence of torsion, a complication that has been reported.

REFERENCE

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