G63 Unsuspected Pheochromocytoma Discovered During Autopsy After Sudden and Unexpected Death in an Expectant Mother

Sophie Gromb, PhD, Nadia Khaldi, MD, Larbi Benali, MD, Mathurin Djodjo, MD, and Alain Miras, PhD, Department of Forensic Medicine - EA 3676 - IFR 99 of Public Health, CHU Pellegrin - Place Amélie RabaLéon, Bordeaux, 33076, France*

The goal of this presentation is to present a case report of sudden death due to pheochromocytoma (PC), and emphasize the necessity of complete autopsy and histological analysis in different tissues in which metastases can develop.

This presentation will impact the forensic community and/or humanity by showing the necessity to perform an autopsy in every case of sudden death in order to determine the cause of death for medical (responsibility), psychological (family), and epidemiological reasons (prevention of disease in the other members of the family); and demonstrating the importance of a complete autopsy and the necessity of histological analysis.

Case Report: An autopsy case of a PC in a 42-year-old asymptomatic and expectant mother is reported, without previously suspected PC. She was pregnant (her last period was 34 weeks ago), and had appointments with her obstetrician regularly. Her last visit to a doctor was 15 days before death, and all had been found normal. She didn't have abdominal pain or hypertension. Several days before death, she suffered asthenia, dyspnea, and chest pain. One morning, during a walk, she felt faint without other symptoms (nausea, vomiting, etc.), and this occurred again several minutes later. A loss of consciousness occurred and, in spite of the intervention of intensive care for more than one hour, she died in heart failure and cardiogenic shock.

Autopsy demonstrated rib fractures consistent with CPR, a normal thyroid gland, gastritis, polyvisceral edema, very intensive pulmonary edema, an enlarged heart, normal coronary arteries, no intravascular coagulation (pulmonary or other), brain edema, and a tumor in the left adrenal gland (60 g). The fetus and uterus were normal. Histological examination confirmed the adrenal tumor was a pheochromocytoma. Toxicology studies were negative.

Discussion : Adrenal PC is usually a benign catecholamine-producing tumor (90%) of the sympathetic nervous system. The incidence is 0.05% in all autopsies (McNeil *et al*., 2000) and sudden death occurred in 8.9% of the cases (Casanaova *et al*., 1993). The PC is bilateral in 505% of cases and left in 635%. The diagnosis is difficult because, generally, PCs develop for a long time with non specific symptoms (or without classical constitutional symptoms), until explosive syndromes appear, related to catecholamine excess, with severe hypertension, acute pancreatisis, hyperacute myocardial ischemia, cerebral hemorrhage, cardiogenic shock, congestive heart failure, and sudden death. Sudden death is the only sign in 1.5% of cases. Several diagnostic methods are available to increase the detection and the diagnosis (metaand normetanephrine in urine is one of the best sensitive screening tests; abdominal MRI - scintigraphy with meta-iodo-benzyl-guanidine for visualization). It is important to note that the heart weight is increased in 95% of the patients.

Conclusion: Diagnosis is often difficult, and many PCs are not recognized during life. Clinicians should be aware of the symptoms of PC, as early diagnosis is very important in order to perform a laparoscopic adrenalectomy. In addition, some symptoms are the same as acute drug intoxication. PCs are usually curable if diagnosed and treated properly, and, in certain cases, this diagnosis necessitates prompt surgical intervention.

During autopsy, certain tumors are observed with increased frequency in patients with PC, including thyroid carcinoma, liver tumor, prostate carcinoma, malignant melanoma, carcinoma of the uterine cervix, and breast carcinoma.

Pheochromocytoma, Sudden Death, Autopsy

 ** Presenting Author*