

## **Nodular goiter after occupational accidental exposure to radiation**

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**Purpose:** During a control of the safety measures at the Radiology Service in a local hospital in Buenos Aires, a lack of an appropriate shielding in the X-ray equipments was detected. **Methods and Materials:** Therefore studies were performed in the group of physicians and technicians exposed and in an age and sex matched group of non-exposed physicians and technicians. Check-ups included thyroid sonography, circulating thyroid hormones, TSH and thyroid antibodies. The exposed group included 9 females and 5 males, while the non-exposed group comprised 8 females and 5 males. **Results:** No thyroid abnormalities were found in the non-exposed patients. On the contrary in the exposed cohort in 11 out of 14 patients nodular goiter was diagnosed, while an additional patient presented diffuse goiter. In 5 out of the 12 patients with goiter, nodule growth or the appearance of new nodules was observed along the follow-up. Four patients presented changes in thyroid function: two had elevated basal TSH with increased titters of anti TPO antibodies in one, while another showed an abnormal TRH-TSH test. A fourth patient had low total T<sub>4</sub> values. Other abnormalities included: sperm abnormalities in 2 out of the 5 males, dry-eye syndrome in other two, mammary nodules in one female and a basocellular epithelioma in another one. **Conclusions:** accidental irradiation leads to thyroid abnormalities, such as the appearance of nodules and alterations in thyroid function.