Introduction

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Two major systems are held responsible for the regulation of homeostasis of the human body: the endocrine and neuroen docrine systems. Both interact with their target organs or target tissues via secretion of ubiquitous messenger molecules, which can be peptides, amines or steroids. The endocrine system consists of various specialist cells in a variety of richly vascularised ductless glands that syn thesise and release hormones into the bloodstream. The neuroendocrine system involves neuroendocrine cells that receive nerve impulses to release neurohormones into the bloodstream. Neuroendocrine glands are found in almost every organ of the body . They are mainly found scattered in the gastrointestinal tract, pancreas (islet cells) and thyroid (C cells). For this reason they are known as the di ff use neuroendocrine system. A shared characteristic in the adrenal medulla, gut and pancreatic endocrine tissues are the amine precursor uptake and decarboxylation (APUD) cells, now known as neuroendo crine cells. For many years they were believed to have a com mon embryological derivation in the neural crest, from which cells migrated to tissues throughout the body . It is now believed that, along with neurones, they share a common neuroendo crine programming influence during their di ff er entiation (see Further reading). Finally , somatostatin receptors (SSTRs) are present on the cell surface of neuroendocrine cells, providing a unique and specific molecular target for imaging and therapy . Nuclear imaging physicians and specialists in radiopharma ceutical therapy are important additional members of the endocrine surgery multidisciplinary team. Dumitru Gerota , 1867–1939, Professor of Surgery , Bucharest, Romania. Throughout the chapter, the diagnosis and management of various conditions are considered. For each and every disease the principles of endocrine surgery are followed in a stepwise - manner: /uni25CF confirm the diagnosis with biochemical tests; /uni25CF render the patient safe (e.g. treat hypertension, hypoglycae - mia, hypokalaemia); /uni25CF consider whether localisation studies are necessary; - /uni25CF decide if surgery is indicated; /uni25CF if so, what operative approach is best?

To understand the immediate and long-term care after • surgery Multiple endocrine neoplasia (MEN syndromes) To understand the

genetics and various presentations of • patients with MEN

To be able to manage patients with MEN disorders and • familial medullary thyroid cancer To understand the principles of surgery and postoperative • management of patients with MEN

Revision #1
Created 2025-12-31 15:21:18 UTC by Omar Ayman
Updated 2025-12-31 15:21:18 UTC by Omar Ayman