Cushing's disease classification

- Diagnosis of Cushing's syndrome with generalized linear model and development of mobile application
- A multi-stage metabolic pattern of adrenocortical adenomas offers diagnostic potential of uric acid, isocitric acid, and proline
- Therapeutic Options for the Prevention of Thromboses in Cushing's Syndrome: A Propensity-Matched, Retrospective Cohort Analysis
- Identification of hypertension subtypes using microRNA profiles and machine learning
- Clinical and surgical outcomes of pediatric Cushing's disease following endoscopic transsphenoidal surgery
- A contemporary, multiinstitutional analysis of transcription factor lineage in pituitary adenomas: comparative study of neuroimaging, histopathology, and clinical outcomes
- Advances in multimodal imaging for adrenal gland disorders: integrating CT, MRI, and nuclear medicine
- Disease Activity and Bone Microarchitectural Phenotype in Patients With Axial Spondyloarthritis

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When considering Cushing’s disease within the broader context of Cushing’s syndrome, it can be classified in several ways based on etiology, severity, and localization of the pituitary adenoma.

1. Classification Based on Etiology: Cushing’s disease is classified as an ACTH-dependent cause of Cushing’s syndrome, where the source of the excess ACTH is the pituitary adenoma.

ACTH-dependent Cushing's syndrome:

Cushing’s disease: ACTH-secreting pituitary adenoma. Ectopic ACTH syndrome: Non-pituitary tumors (e.g., small-cell lung carcinoma) that secrete ACTH. Ectopic CRH syndrome: Rare tumors secreting corticotropin-releasing hormone (CRH), stimulating pituitary ACTH production. ACTH-independent Cushing's syndrome:

Adrenal adenomas or carcinomas producing cortisol autonomously. Adrenal hyperplasia leading to cortisol overproduction. 2. Classification Based on Tumor Size: Pituitary Microadenoma: Tumor size is less than 10 mm in diameter. Most common form of pituitary adenomas causing Cushing’s disease. Pituitary Macroadenoma: Tumor size is greater than 10 mm in diameter. Less common but often associated with more severe clinical symptoms due to larger tumor burden and potential for compressive effects on surrounding structures. 3. Classification Based on Cortisol Production: Overt Cushing’s Disease: Full clinical picture of Cushing’s syndrome with persistent hypercortisolemia and classic signs and symptoms, such as central obesity, hypertension, and osteoporosis. Subclinical Cushing’s Disease: Mild or biochemical Cushing’s syndrome where cortisol excess is present, but the patient has few or subtle clinical symptoms. Often diagnosed during evaluation for other conditions like hypertension or osteoporosis. 4. Classification Based on ACTH Levels: ACTH-Dependent Hypercortisolemia:

Elevated or inappropriately normal ACTH levels with increased cortisol levels. This is characteristic of Cushing’s disease (and ectopic ACTH syndrome). ACTH-Independent Hypercortisolemia:

Suppressed ACTH levels due to autonomous cortisol production (seen in adrenal causes, not in Cushing’s disease). 5. Classification Based on Response to Dexamethasone: Dexamethasone-Suppressible Cushing’s Disease: Patients with Cushing’s disease often show a partial suppression of

cortisol with high-dose dexamethasone. This helps differentiate it from ectopic ACTH syndrome, where there is no suppression. Non-Suppressible Cushing's Disease: In some rare cases, cortisol may not suppress with dexamethasone, complicating differentiation from other forms of Cushing's syndrome. 6. Classification Based on Invasiveness of the Tumor: Non-Invasive Pituitary Adenomas: The adenoma is confined to the sella turcica without invading surrounding structures. Invasive Pituitary Adenomas: The adenoma may invade nearby structures such as the cavernous sinus or optic chiasm, potentially causing neurological symptoms (e.g., visual disturbances, cranial nerve deficits). Summary of Key Classifications: ACTH-Dependent: Pituitary adenoma secreting ACTH. Tumor Size: Microadenoma (<10 mm) vs. Macroadenoma (>10 mm). Cortisol Production: Overt vs. Subclinical Cushing's disease. ACTH Levels: ACTH-dependent vs. ACTH-independent hypercortisolemia. Dexamethasone Response: Suppressible vs. Non-suppressible. Tumor Invasiveness: Non-invasive vs. invasive adenomas.