

A Health Care Provider's Guide to Pituitary Disorders

Etiology

Pituitary disease is most often caused by benign tumors (adenomas) that are classified as either functioning (overproducing one or more hormones) or nonfunctioning. With increasing brain MRI use, the discovery of incidental adenomas has become more of a clinical problem. Pituitary disorders can also be caused by a variety of other etiologies including infiltrative, immunologic, ischemic, hypothalamic and metastatic disease as well as trauma.

Signs and symptoms

Patients suffering with pituitary diseases usually present to several medical specialties with a diverse range of symptomatology.

Examples of medical specialties to which pituitary disease patients may present, with associated symptomology:

- Obstetrics and gynecology: galactorrhea, menstrual irregularities, infertility, hirsutism
- Urology: sexual dysfunction, hypogonadism
- Neurology: headache, proximal muscle weakness, carpal tunnel syndrome
- Ophthalmology: blurred vision, visual field loss, diplopia
- Dermatology: dry, oily, diaphoretic skin
- Orthopedics and rheumatology: joint pain, joint/bone abnormalities
- Sleep specialists: increased snoring or sleep apnea
- Family practice and internal medicine: all the above, polyuria, fatigue, depression, hair loss and weight change

The non-specific and multifaceted symptomatology of pituitary disease can pose a barrier to an initial diagnosis. A partial list of common signs and symptoms of pituitary hormone deficiency and excess are listed below. Within the context of the indicated symptoms, the following three questions can also help a clinician identify any potential pituitary disease.

1. Are there signs or symptoms of deficiencies in pituitary hormones? Hormonal deficiencies can occur in isolation or in combinations.
2. Are there signs or symptoms of excess in pituitary hormones? Hormonal overproduction can also occur in isolation or in combination and can occur in the background of other hormonal deficiencies.
3. Are there signs or symptoms of a space-occupying pituitary lesion? Clinical manifestations include headaches, visual problems (especially peripheral vision loss) and occasionally seizures or cranial nerve deficits.

Partial list of signs and symptoms of pituitary hormone dysregulation

Deficiency	Disorder	Symptoms
Adrenocorticotrophic Hormone (ACTH)	Central adrenal insufficiency	Fatigue, low blood pressure, nausea, dizziness with orthostasis, weight loss
Thyroid-stimulating Hormone (TSH)	Central hypothyroidism	Constipation, cold intolerance, proximal muscle weakness, dry skin, memory loss, hair loss
Luteinizing and Follicle stimulating hormones (LH/FSH)	Central hypogonadism	Sexual dysfunction, hot flashes, menstrual irregularity in women
Growth Hormone (GH)	Adult GH deficiency	Lack of vigor, decreased exercise tolerance, feelings of social isolation
Vasopressin, also named antidiuretic hormone (ADH)	Diabetes insipidus	Polydipsia, polyuria, nocturia
Excess	Disorder	Symptoms
Prolactin	Hyperprolactinemia	Galactorrhea, sexual dysfunction, menstrual irregularities
ACTH/cortisol	Cushing's disease	Moon facies, truncal obesity, purple striae, hirsutism, hypertension, diabetes mellitus, proximal muscle weakness
GH	Acromegaly	Enlarged hands/feet/jaw, carpal tunnel syndrome, oily skin, joint pain, diaphoresis

Initial pituitary disease diagnostic workup

While a preliminary diagnosis of pituitary disease can be challenging, an initial basic diagnostic workup for pituitary disease is straightforward and can be easily initiated if pituitary disease is suspected.

Pituitary magnetic resonance imaging is performed if either a laboratory evaluation indicates the presence of pituitary disease or if a space-occupying lesion is suspected.

Due to the nuances of pituitary disease, interpretation of a laboratory evaluation can be challenging; assistance in this process is offered through the OHSU neuroendocrinology consultation service. The OHSU Pituitary Center offers endocrine testing, or can be consulted independently to assist referring physicians in performing dynamic endocrine testing.

Laboratory testing

- Prolactin
- 8 a.m. serum cortisol and /or ACTH (cortrosyn stimulation test as needed)
- TSH and free T4
- Basic metabolic panel
- LH/FSH in both sexes, testosterone (men)
- IGF-1 (insulin-like growth factor-1)
- Overnight dexamethasone test, salivary cortisol and or 24-hour urine free cortisol (if clinical suspicion of Cushing's disease)

Magnetic Resonance Imaging (if indicated)

- Pituitary MR imaging (with gadolinium if no contraindications)

Treatment

If the workup indicates the presence of a pituitary tumor or disease, many clinicians will seek the help of pituitary disease experts to help treat and manage the patient. Treatment typically includes a combination of medical therapy and surgery and very rarely may involve pituitary radiation.

- The majority of prolactin-secreting tumors can be treated medically while other tumors, if large and inducing compressive symptoms, will require surgery.
- The most common surgical approach for the resection of pituitary tumors is through the sphenoid sinus (transsphenoidal).
- Surgical outcome studies have repeatedly shown that surgeons highly experienced in this procedure obtain the highest cure rates with the lowest rates of recurrence, postoperative complications and pituitary dysfunction.

Pituitary disease patients should be evaluated pre- and postoperatively by a neuroendocrinologist with experience in managing neuroendocrine diseases.

Multidisciplinary management of pituitary tumors, including neuroendocrinology, dedicated pituitary neurosurgeon, ear, nose and throat specialists, neuroradiology, neuroophthalmology and neuropathology in a Pituitary center of excellence has been shown to improve both short and long term clinical outcomes.

We closely collaborate with referring providers to coordinate follow-up plan and appointments to minimize travel for your patients.

We appreciate your trust in consulting us for pituitary care.

The OHSU Physician Consult & Referral Service, staffed by professional and friendly referral specialists is available 24/7. To refer a patient for a consult, call 503 494-4567 or toll-free at 800 245-6478 or fax 503 346-6854.

OHSU accepts most health plans.
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