

IMPACT OF H&N CANCER AND TREATMENT ON THE ENDOCRINE SYSTEM



RICHARD M. HIRATA, MD



I. GENERAL EFFECTS OF HEAD & NECK CANCER & TREATMENT

A. TRAUMATIC TO BODY AND SYSTEM

1. DEFENDS AGAINST BLOOD AND FLUID LOSS

a. Clotting factors

b. Vasopressin/ADH

2. PROTECTS BY PROVIDING ENERGY TO MUSCLES, HEART, AND BRAIN

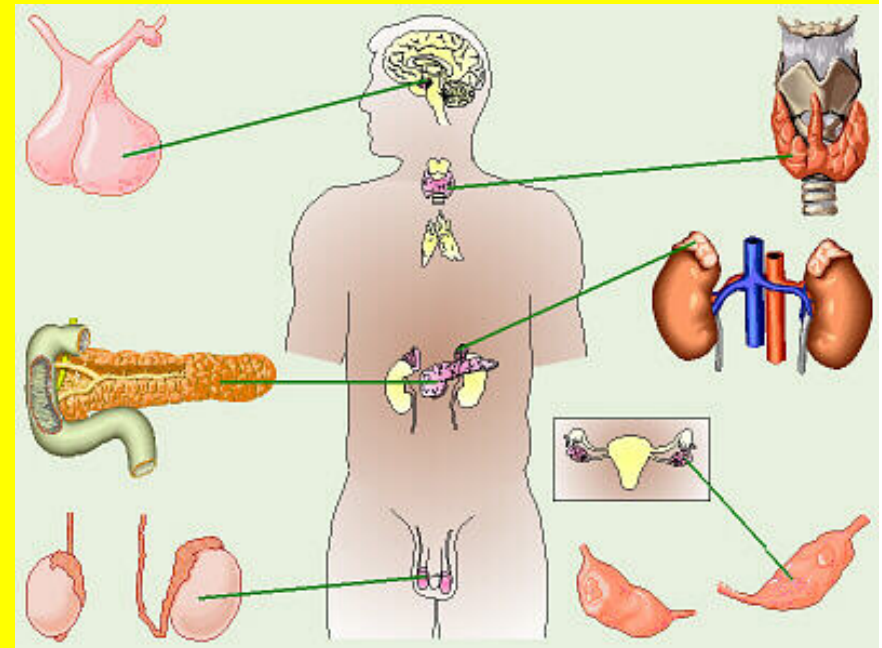
a. Glucose



GENERAL EFFECTS OF HEAD & NECK CANCER & TREATMENT

ENDOCRINE ORGANS AFFECTED

- Pituitary gland (ACTH, TSH, Vasopressin/ADH, GH, FSH, LH, Prolactin, Oxytocin, etc)
- Thyroid-Thyroxine (T4)
- Adrenal-Cortisol, Aldosterone, Epinephrine/Norepinephrine
- Parathyroid
- Pancreas-Insulin, Glucagon
- Ovary, Testis
 - Usually functions by feedback mechanism
 - Sex hormone functions diminish
 - Thyroid, adrenal, ADH, glucagon hormones increase

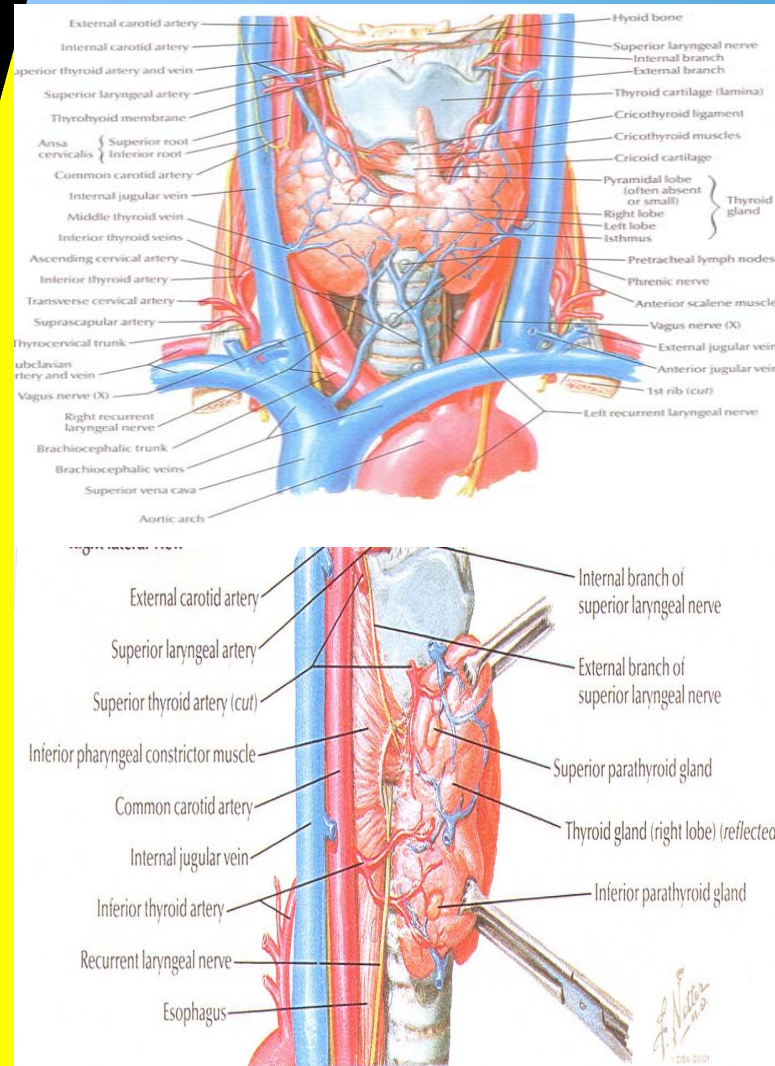


GENERAL EFFECTS OF HEAD & NECK CANCER & TREATMENT



- ◆ General effects usually temporary
 - Less essential hormone (sex, etc) function returns after trauma is over
 - Long term corticosteroid use-may be necessary but
 - May cause atrophy of adrenal gland-often requires large doses of cortisol during operations and recovery
 - There are long term adverse effects
 - Physical changes
 - Osteoporosis
 - Easy bruisability and skin thinning
 - Alteration in immunity
 - Chemical diabetes

DIRECT EFFECTS OF TREATMENT OF HEAD & NECK CANCERS



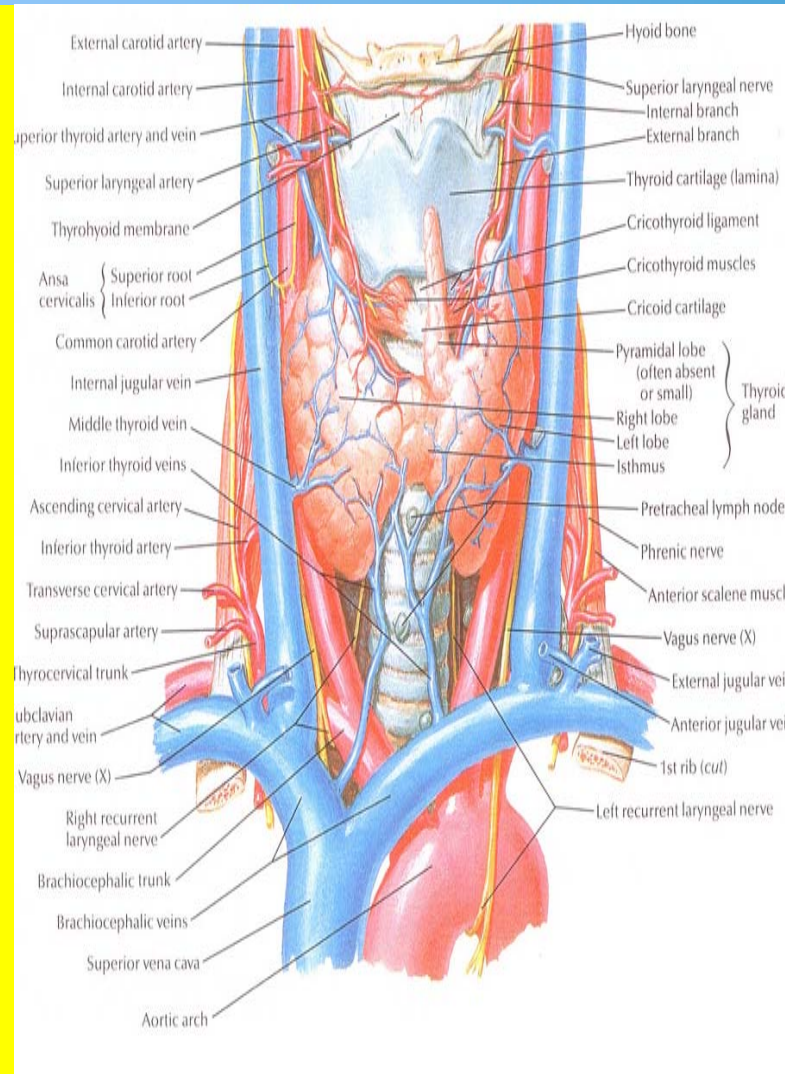
◆ **ADVERSE EFFECTS DIMINISH OVER TIME BUT MAY NOT NECESSARILY DISAPPEAR**

- **SURGICAL TREATMENT** may create significant functional and cosmetic alterations
 - Breathing
 - Chewing and swallowing
 - Speech and voicing
 - Hypothyroidism if thyroid is removed
 - Hypoparathyroidism/hypocalcemia w/thyroid surgery

DIRECT EFFECTS OF TREATMENT OF HEAD & NECK CANCER

- ◆ **RADIATION THERAPY MAY CREATE SIGNIFICANT ALTERATION IN FUNCTION**
 - Dry mouth w/decreased salivation
 - Difficulty swallowing
 - Increase risk of dental caries
 - Increase cicatrix (hardening of tissues of the head and neck) and decrease mobility of neck
 - Increase risk of hypothyroidism
 - **CHEMO/RADIATION RX** may amplify the alterations in function

DIRECT EFFECTS OF H & N CANCER AND RX ON ENDOCRINE ORGANS OF H & N



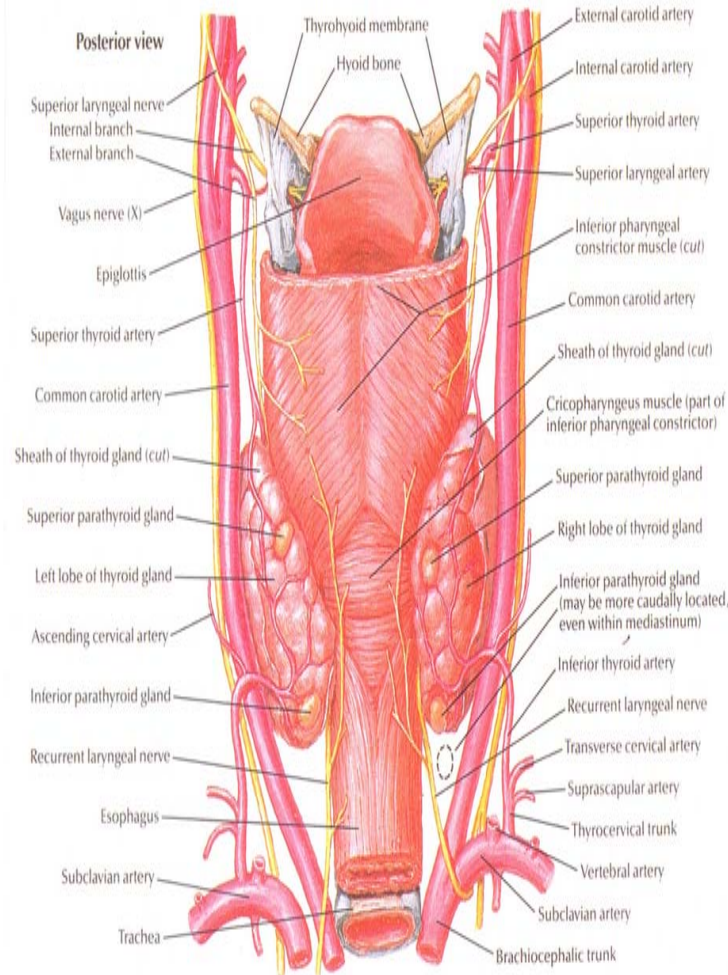
ADVERSE EFFECTS INCREASE W/ADVANCED STAGE OF PRIMARY CANCER

■ THYROID- hypothyroidism, cancer?

- Surgery-removal for thyroid tumor, removal of thyroid necessary in removal of a cancer of the head and neck may cause hypothyroidism
- Radiation therapy- hypothyroidism and ?cancer
- Idiopathic

DIRECT EFFECTS OF H & N CANCER AND RX ON ENDOCRINE ORGANS OF THE H & N

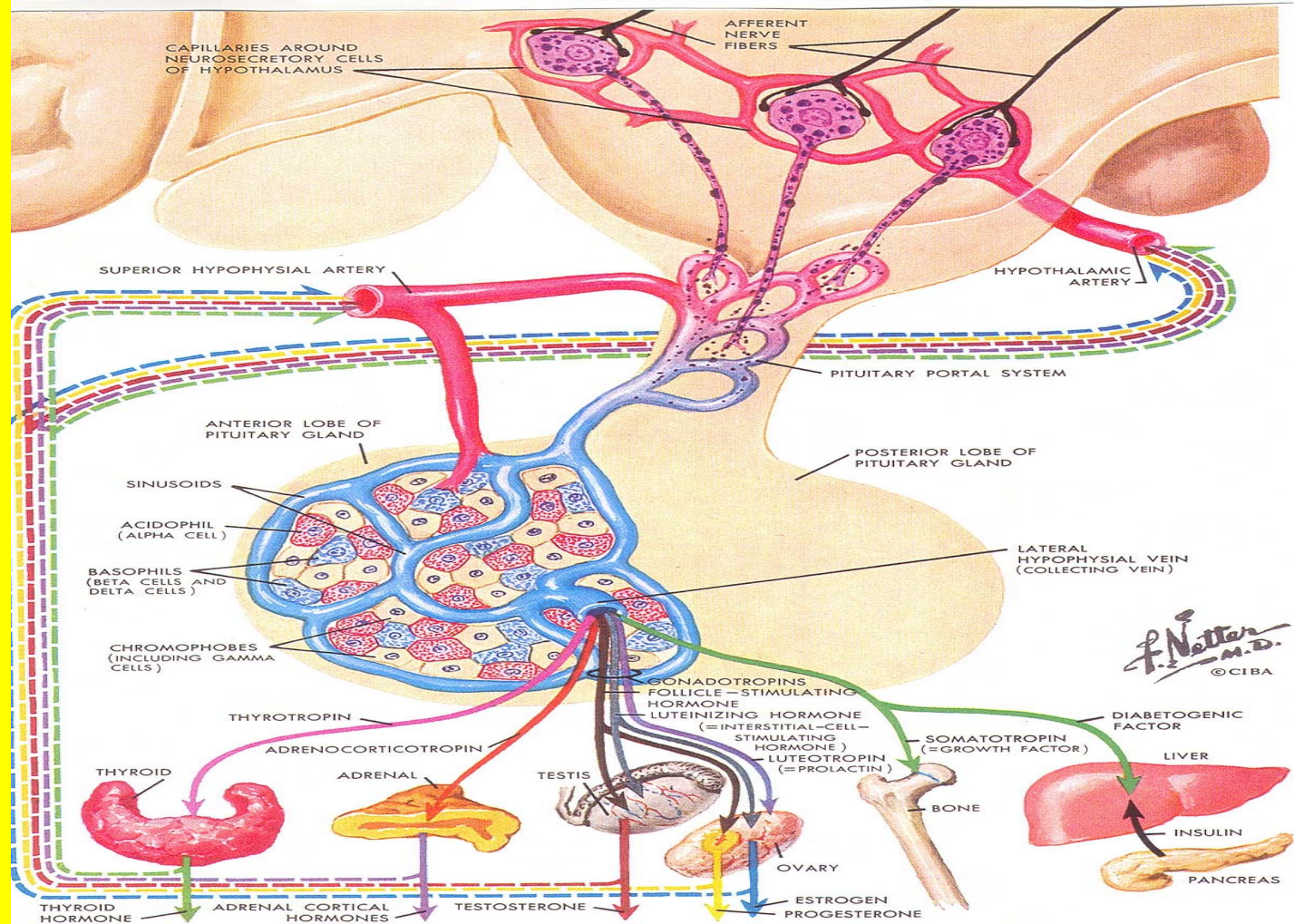
SEE ALSO PLATE 74



◆ **PARATHYROID-**
Hypoparathyroidism,
temporary or permanent.
May need to take calcium
and Vitamin D

- Thyroid surgery-more likely w/total thyroidectomy as the treatment
- Parathyroid surgery
- Idiopathic

IMPACT OF H&N CANCER AND TREATMENT ON THE ENDOCRINE SYSTEM



IMPACT OF H&N CANCER AND RX SUMMARY



- ◆ CANCER IS TRAUMATIC TO THE BODY
- ◆ CANCER TREATMENT IS TRAUMATIC
- ◆ BODY DEFENDS ITS INTEGRITY
- ◆ BLOOD VOLUME, VITAL ORGANS, ENERGY
- ◆ ENDOCRINE NETWORK SUSTAINS
- ◆ GENERAL ADVERSE EFFECTS TEMPORARY
- ◆ DIRECT ADVERSE EFFECTS IMPROVE
- ◆ THYROID/PARATHYROID

H&N CANCER AND RX AND ENDOCRINE SYSTEM

- ◆ QUESTIONS
- ◆ COMMENTS
- ◆ DISCUSSION

