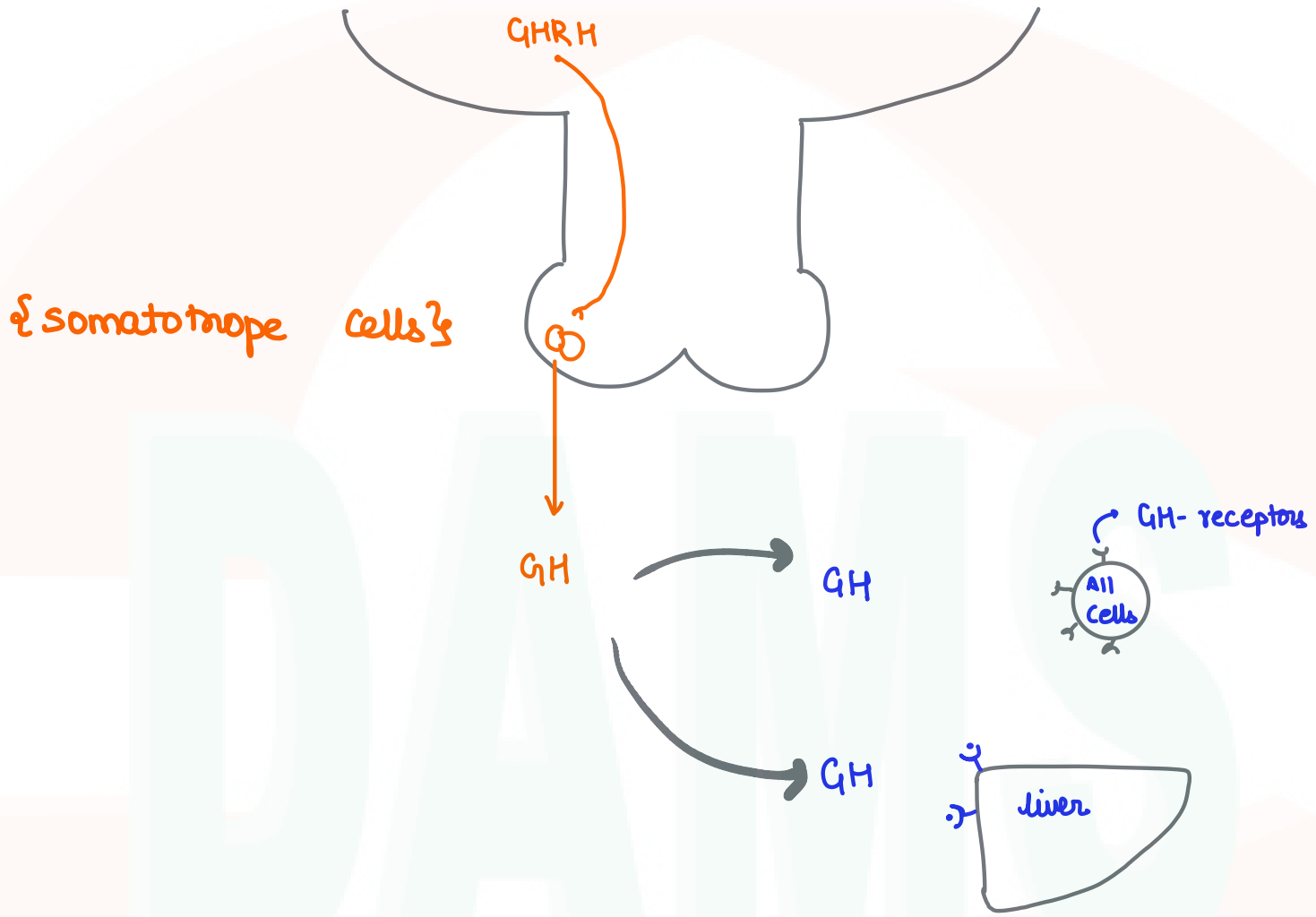
GROWTH HORMONE

∴ Normal secretion -



Insulin like Growth factor (IGF-1)

∴ normal actions -

1.) ↑ses protien - synthesis

2.) Antagonists Insulin → ↑ Glucose

↑ses Glycogenolysis → ↑ Glucose

↑ses Gluconeogenesis → ↑ Glucose

↑ses lipolysis → ↓se body fat mass

↑ IGF - 1 → ↑se sensitivity of GH- receptors.

LARON's SYNDROME

- GH Insensitivity
- defect In GH receptor

∴ C|F -

Hypoglycemia

short stature

micro - penis

Tse body fat mass

∴ Investigations -

GH↑
IGF-1 ↓

GH- DEFICIENCY IN ADULTS

∴ Causes -

Infection
Inflammation
Infarction
→ Pituitary

∴ C/F - ↑se body fat mass

↑se waist to hip ratio.

C.S. 30 ♂ ; C/O - fever
headache
neck stifness
↓ses level of consciousness
↓
Meningo - encephalitis
↓
stable
↓
discharge.

C/F → ↑ body fat mass
↑ w: hip ratio

Ans :-

∴ Investigation - - (X) random GH levels.
↳ (no use)

(pulsatile secn)
low level of GH.

- (✓) Insulin Induced hypoglycemia

GH antagonises Insulin → ↑ Glucose

↓ GH

⊖ feedback to Pituitary

↓↓ Glucose ⟶ ⊕ Pit. → ↑ GH

Stimulate Pituitary & measure GH levels :-

↓

Inj. Insulin

↓

measure GH levels

↓

↑ ses >7 mcg/L

↓

normal

Fails to ↑se

↓

def. of GH

↓

recombinant GH.

C/I of Insuln - (Insulin Induced Hypoglycemia)

- ✓ DM
- ✓ IHD
- ✓ CVA (stroke)

C/I of recomb. GH -

- active neoplasm
- Intracranial HTn

GH → ↑ IGF-1

↓

↑ ses CSF prodn

↓

↑ ses I.C.P

- uncontrolled DM.

HYPER SECRETION OF GH

Fusion of Epiphysis

Before : fusion of Epiphysis → Gigantism

After : Fusion of Epiphysis → Acromegaly

∴ Causes -

Pituitary Adenoma (98%)

Pancreatic Islet cell tumor (<1%)

∴ C/F -

Frontal bossing

↑ sed hand and foot size

mandibular enlargement

Prognathism

widened Space b/w lower Incisor teeth

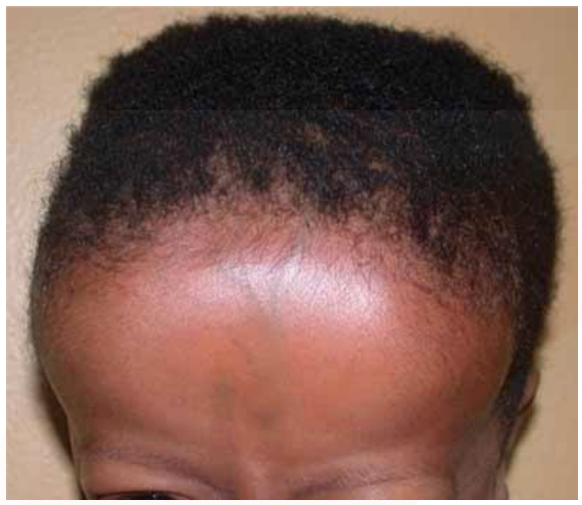
Tall stature

Inc. heel pad thickness

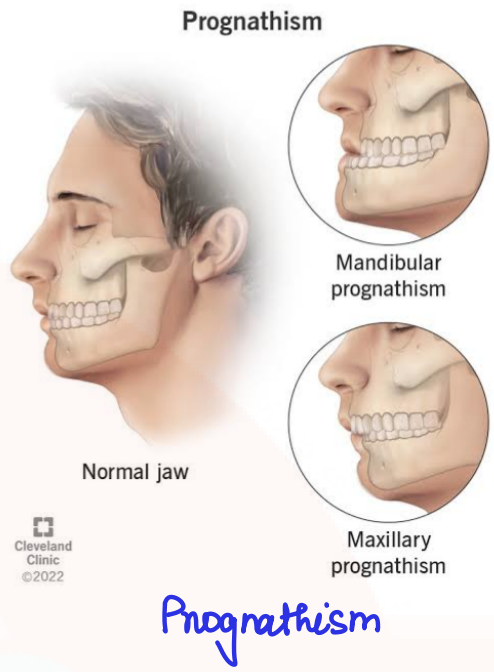
Visceromegaly

DM

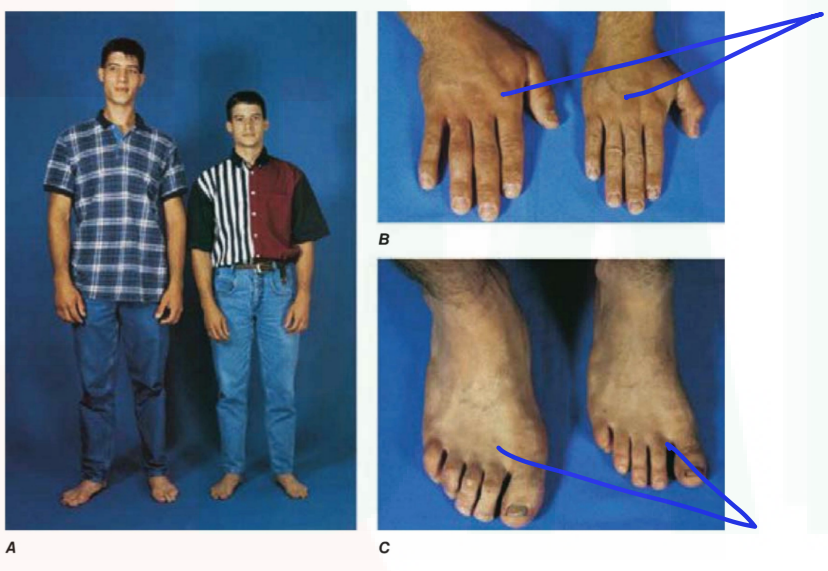
Colon polyp



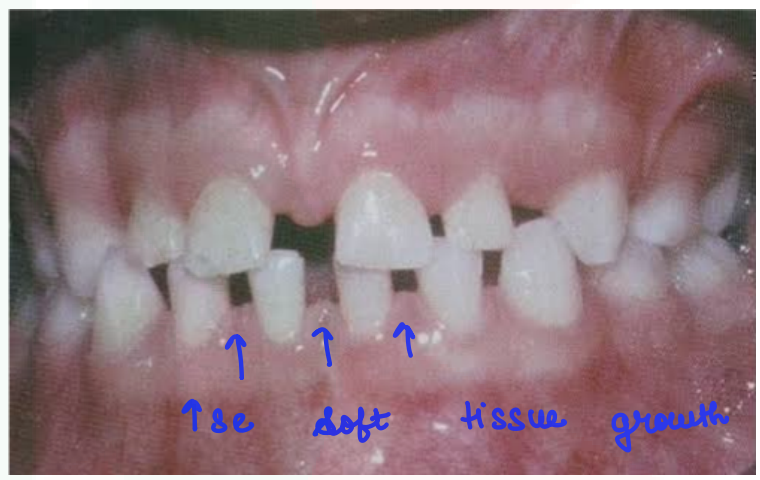
Frontal bossing

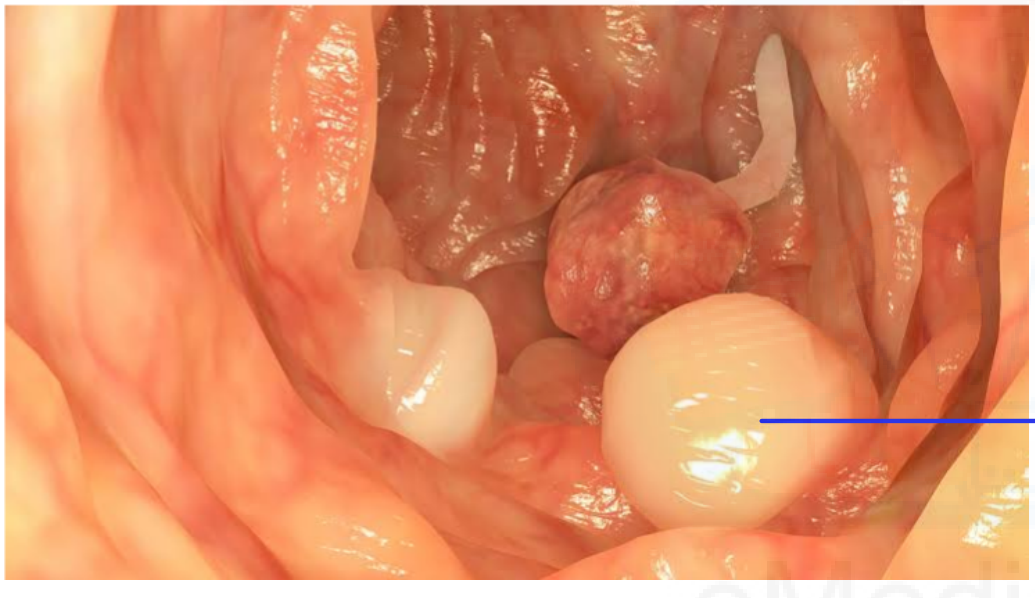


Prognathism



hand & foot size ↑ sec.





IGF - receptors ⊕nt on colon

↓

proliferation ↑

∴ Management →

Protocol

Screening Test - IGF level ↑ se.

Conf. Test - Oral glucose load test
(75 gms)
↓
↑ glucose
↓
measure GH

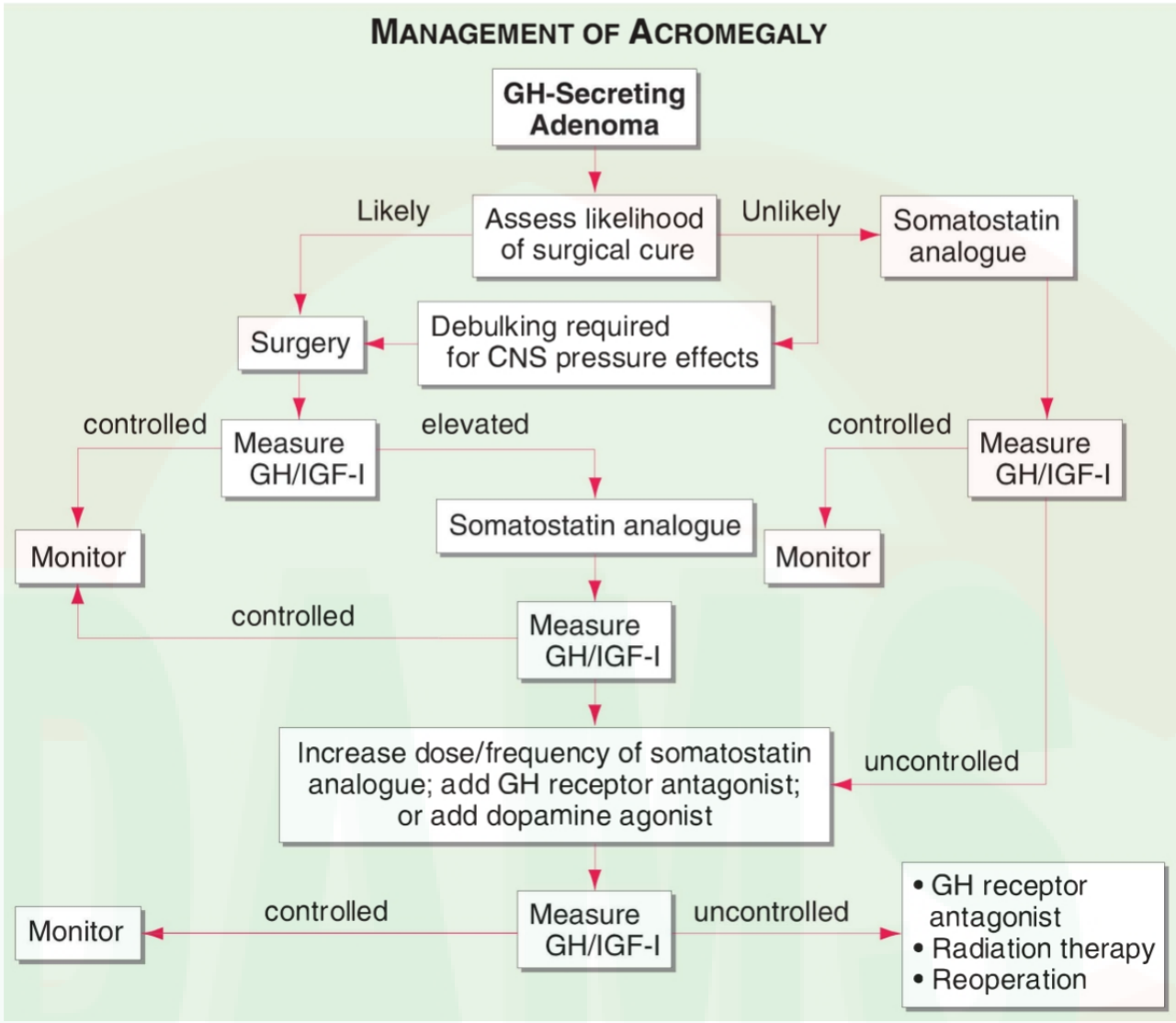
↓ sec → < 0.4 mcg/L → normal

fails to decrease → hypersecn of GH → MRI- Brain for pit.
↓
TRANS - SPHENDIDAL SURGICAL
RESECn OF TUMOR.

Drugs as adjuvant therapy

Somatostatin Antagonist - Octreotide
Lanreotide
Sandostatin

GH- recep. - Antagonist - Pegvisomant


MANAGEMENT OF ACROMEGALY
GH-Secreting Adenoma
Assess likelihood of surgical cure
Likely
Unlikely
Somatostatin analogue
Surgery
Debulking required for CNS pressure effects
controlled
Measure GH/IGF-I
elevated
controlled
Measure GH/IGF-I
Monitor
Somatostatin analogue
Monitor
controlled
Measure GH/IGF-I
Increase dose/frequency of somatostatin analogue; add GH receptor antagonist; or add dopamine agonist
uncontrolled
Monitor
controlled
Measure GH/IGF-I
uncontrolled
• GH receptor antagonist
• Radiation therapy
• Reoperation