Bariatric Surgery in Adolescence

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- Childhood obesity is a **prevalent and progressive** disease with few successful treatment options.

- Pharmacologic treatment options for obese adolescents are **limited**, and efficacy is also generally **modest.**

- **weight loss surgical options as the initial treatment for select adolescents.**

- Body mass index (BMI) is a reasonably accurate method for predicting adiposity.
- **Screening tool**
- **The terms: overweight (BMI for age and gender ≥85th percentile)**
- **obese (BMI for age and gender ≥95th percentile)**
- **severely obese (BMI for age and gender >120% of the 95th percentile)**
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- Approximately **9%** of adolescents meet the definition of severe obesity
- in a recent study, it was found that surgical treatment was associated with a 50% reduction in obesity-related mortality risk.

Selection criteria

- **BMI of 35 kg/m2 or greater** in the presence of severe obesity related comorbidities
- **BMI 40 kg/m2 or greater** with comorbidities Or :

- Co Morbidity:

  type 2 diabetes mellitus (DM), obstructive sleep apnea(OSA), severe nonalcoholic steatohepatitis, or symptomatic pseudotumor cerebri.

- Risk factors that are responsive to weight loss (e.g., hypertension,mild OSA, glucose intolerance, obesity-related renal dysfunction, or dyslipidemia), functional impairment, orquality of life (QOL) impairment.

- Multidisciplinary bariatric team
- **Timing Of Surgery:**
- **Physical and Physiological** maturity

- impact of significant caloric restriction on predetermined goal adult stature
- Physiologic maturation is generally complete by the time of sexual maturation, Tanner stage 3 or 4
- Skeletal maturation (adult stature) is normally attained by the age of 13–14 years in girls and 15–16 years in boys

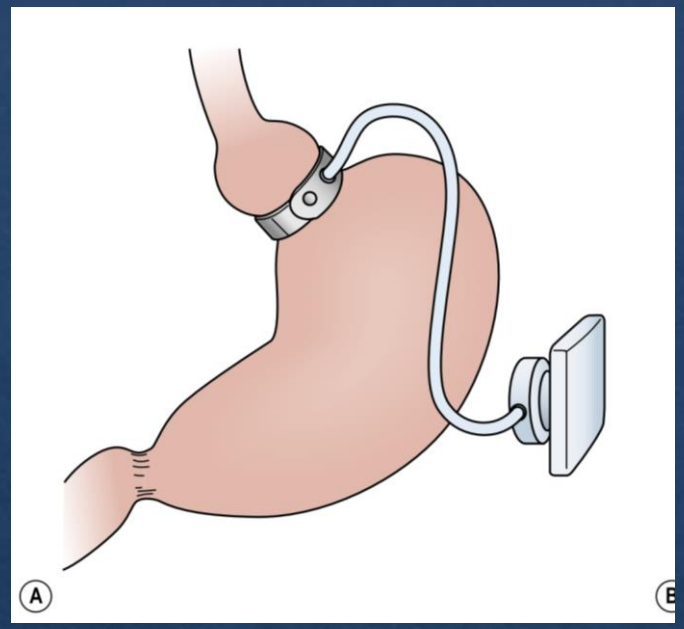
- If an individual has attained >95% of skeletal maturation, little concern exists that an intervention will significantly impair completion of linear growth.

- No evidence to suggest that commonly used bariatric procedures in preadolescent youth impairs attainment of adult stature

Surgical options

- Undre 18 years old less data

- Laparoscopic roux-en-Y gastric bypass (RYGB)
- Laparoscopic adjustable gastric banding (AGB)
- **Laparoscopic VSG**
- Duodenal switch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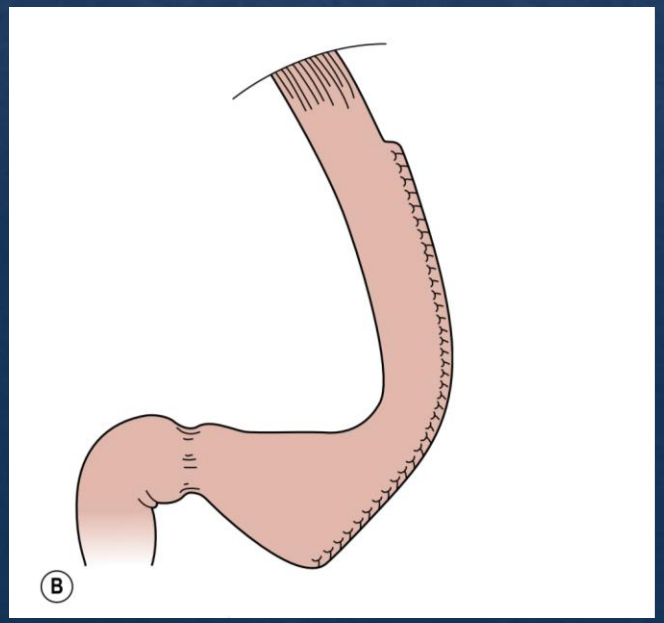
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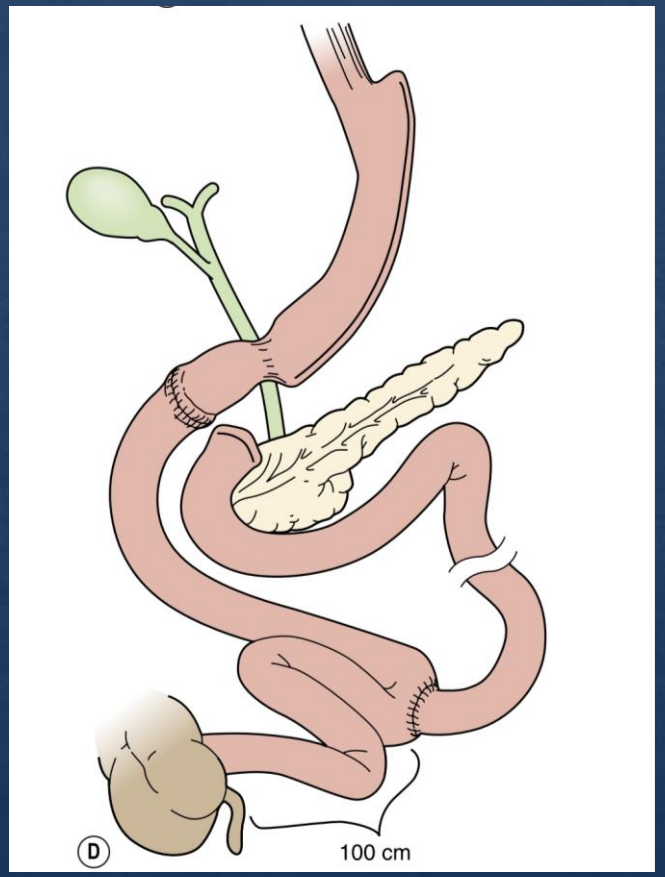
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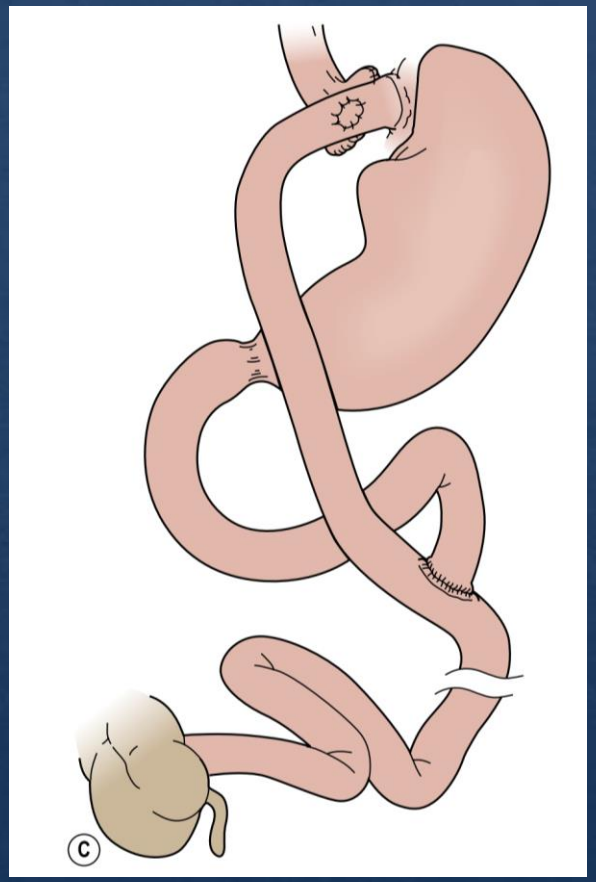
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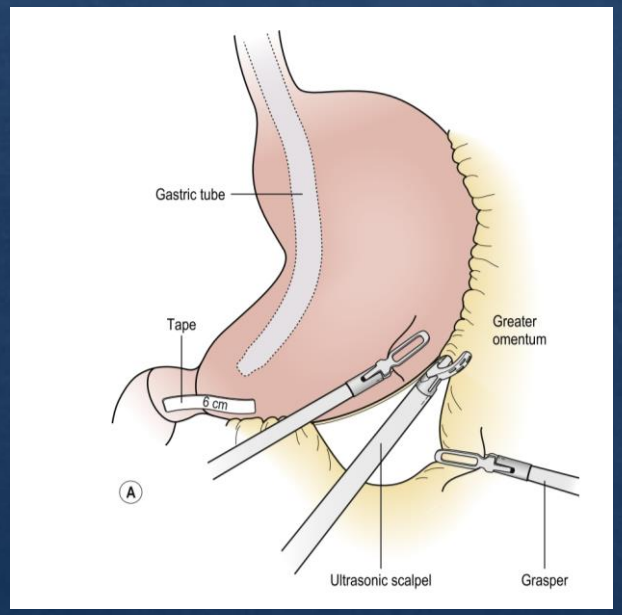
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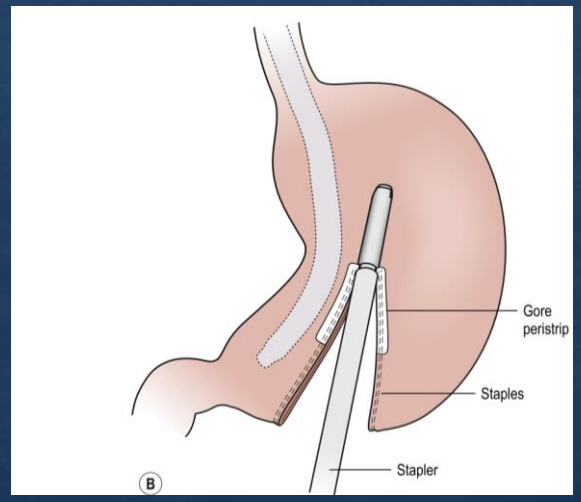
Ultrasonic scalpel
Grasper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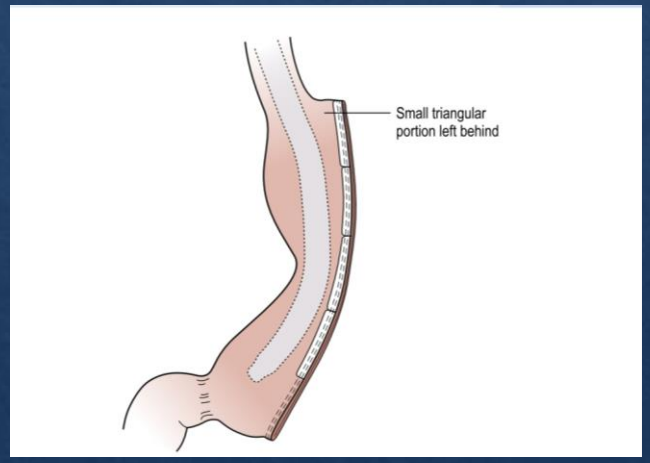
Small triangular portion left behind

Pre op Evaluation

- Discussion (diet, procedure, nursing , …)
- Anesthesiologist , cardiologist consult
- **Pre op Laboratory**

1. Serum chemistry and liver profile, lipid profile, complete blood count, Hemoglobin A1C, Fasting Blood glucose
2. 25-hydroxyvitamin D, vitamin A, and iron studies

- Correction of any deficiencies

Post Op

- Hydration and monitoring , U/O
- Day 1 → contrast study

- Because diminished diet → diet and vitamin/mineral supplementation

- After bypass → very low-calorie, low-carbohydrate dietary intake → high protein diet

  iron, folate, calcium, vitamin D, and **vitamin B12** can occur after gastric bypass

Post Op

- **Pregnancy** → increased fertility (a physiologic change due to increased insulin sensitivity and resumption of ovulation)

- Avoid pregnancy 2 years after surgery → **IUD** **even during surgical operation**

- Closely monitor the **bone mineral density** of adolescents undergoing bariatric surgical treatment → due to **impaired Vit D and Calcium → risk Fx and Osteoporosis**

Post op

- seeing RYGB and VSG patients at 2 weeks, 6 weeks, 3months, and then every third month for the first year

- Diet gradually increase over 6 month → 0.5 to 1 gr/kg Protein of ideal weight
- Dysphagis
- NSAIDS avoid
- After VSG → PPI for **6 months**
- Multivitamins,minerls , Vit D , Calcium , Iron , B12 and B1 → first **6 months**

Post op

- Five basic "rules" with each patient encounter:

1. eat protein first,
2. drink 64–96 ounces of water or sugar-free liquids daily,
3. no snacking between meals,
4. exercise 30–60 minutes per day,
5. always remember vitamins and minerals

- Regular laboratory every 3 to 6 months
- Bone density evalution yearly

Thanks for your attention