WEIGHT LOSS SURGERY DECREASES IDIOPATHIC INTRACRANIAL HYPERTENSION IN 9 YEAR OLD FEMALE WITH PSEUDOTUMOR CEREBRI

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INTRODUCTION

- By female with pseudotumor cerebri (also known as idiopathic intracranial hypertension) associated with severe obesity
- Two years of failed management for migraines: multiple lumbar punctures (LP), decompression surgery for Chiari 1 malformation, and a carefully managed weight loss and exercise regimen
- Referred for weight loss surgery as an attempt to save the patient’s vision, and improve her psychological, social and physical health
- The Ethics Committee was consulted to advise us regarding the recommendation to provide an irreversible procedure (gastric sleeve resection) in a pre-adolescent

OBJECTIVES

1. Learn about the relation between obesity and idiopathic intracranial hypertension (IIH)
2. Identify special considerations in the approval process for a 9 year old female to undergo weight loss surgery in an effort to improve her quality of health
3. Identify effects of weight loss on pseudotumor cerebri in a 9 year old female

BACKGROUND

- Age 4y: BMI 90th percentile. Onset of occipital headaches without emesis
- Age 6y:
  - Traced multiple migraine medication regimens, underwent surgical decompression of Chiari 1 malformation
  - Headaches severe and disabling (terrifying, only resolves with sleep), aura of “dog barking” noise
  - Decompensated academia, absenteeism, learning delay; repeated the 1st grade
  - Normal testing (EEG, CT, MRI, fundoscopic exam)
  - Referred to psychology for anxiety, ophthalmology for astigmatism - prescribed eyeglasses
  - BMI unchanged despite weight loss management and exercise attempts
- Age 7y:
  - First LP, opening pressure 50s tapped down to 15-20mm H2O
  - Headaches resolved for 1 day
  - Debilitating headaches persist despite maximum therapy
  - Multiple hospitalizations and LPs for increased ICP
  - New onset ptosis and ocular involvement
  - Medical management determined to be insufficient
  - After several months of obligated treatment and maximum therapy, case presented to the Ethics Committee
- Age 9y:
  - Referred for weight loss surgery. Eventual insurance approval.
- Age 9y:
  - Uncomplicated laparoscopic gastric sleeve resection
  - LP once during immediate surgical admission. no additional LP procedures since

IMPLICATIONS FOR PRACTICE

- Weight loss surgery [particularly gastric sleeve resection]
  - Offered to select adolescents (between ages 10-19 years) suffering from obesity, who meet the following criteria:
    - History of 5 years obesity
    - Weight loss program ≥6 months with failure to lose 20% excess body weight
    - BMI ≥40, or ≥29% on growth curve, or BMI ≥25 with associated co-morbidities
  - Referral for bariatric surgery in preadolescence requires
    - Ethics Committee input
    - Multiple interactions with insurance company to obtain approval
    - Pseudotumor cerebri
      - Classified as IIH in the absence of a space occupying lesion, seen in young obese women, with clinical features such as headache and visual changes
      - Early detection and treatment of the underlying cause is crucial for preservation of vision
      - Its association with obesity has raised questions about the underlying mechanism of increased intracranial fluid outflow resistance
      - It has also been hypothesized that increased intra-abdominal pressure can trigger a rise in intracranial pressure (ICP)
      - The risk of serious obesity related co-morbidities can, although unusual, outweigh the risks of bariatric surgery in a pre-adolescent.
    - Our patient’s co-morbidities: IIH, central obesity, acanthosis nigricans, OSA, asthma, BMI ≥99% weight loss surgery decreases idiopathic intracranial hypertension in a 9 year old female

KEYWORDS

Idiopathic intracranial hypertension (IIH), obesity, pseudotumor cerebri, gastric sleeve resection (SG), obstructive sleep apnea (OSA), ventricular peritoneal shunt (VP), continuous positive airway pressure (CPAP), lumbar puncture (LP)

POST-OPERATIVE EVALUATIONS

- Surgery Admission
  - Uncomplicated gastric sleeve resection at age 9y; LP done - opening pressure 24. Discharged home on post-operative day 11 on full liquid diet.
- 2 weeks post-op:
  - No headaches, emesis related to behavioral eating pattern, reflux, constipation, not taking prescribed vitamins, not drinking enough.
- 3 weeks post-op:
  - Hospitalized for 2 weeks for thiamine deficiency and dehydration. EGD normal. Maximized reflux medication regimen. No headaches.
- 6 weeks post-op:
  - Emesis unchanged (presumed behavioral problem), reflux, constipation, advanced to pureed diet, decreased Amitriptyline and Diamox.
- 2 months post-op:
  - Emesis normal, reflux normal, emesis improved, constipation, returned to school (3rd grade)
- 5 months post-op:
  - Mild headaches relieved with Excedrin, Diamox discontinued, constipation, improved compliance with diet and medication.
- 12 months post-op:
  - CPAP discontinued, emesis resolved, constipation improved, headaches mild and infrequent, compliant with medications. Thriving in school.

CONCLUSION

- Critical co-morbidities, such as IIH, are appropriately treated with bariatric surgery in the pre-adolescent
- A multidisciplinary team approach is mandatory for pediatric/adolescent bariatric surgical care

KEY REFERENCES