APPROACH & DD OF VOMITING

(ACUTE & PERSISTENT)

By

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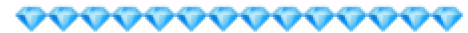

كتير مننا بيقابلوا عدد كبير من المرضى وشكوتهم الرئيسيه القئ ....
أحيانا يكون مؤقت ويخف مع العلاج واحيانا تانيه بيكون مستمر أو متكرر ولا يستجيب للعلاج 🤧🤧🤧🤧🤧🤧🤧
فى الموضوع ده هتعرف ازاى تحط خريطه فى دماغك لكل الأسباب الممكنه وكمان ازاى تاخد هستورى محترف لتحديد السبب وهتكشف على ايه بالظبط وازاى هتختار الإشعات أو التحاليل فى ضوء الداتا اللى جمعتها من التاريخ المرضى و الفحص الاولى ،، باعتذر عن طول الموضوع لكثرة التفاصيل ،، لكنه دليلك لكل الأسباب الممكنة للقىء وبالذات فى حالات القئ المستمر واللى بتبدو غالبا مجهولة المصدر وصعبة التشخيص ،، وبنضطر نديلها مضادات قئ ومحاليل ولا يتبادر إلى ذهننا سوى المنظار العلوى للجهاز الهضمى كملجأ اخير لحالات القئ المستعصى ،،
الموضوع ده هيجيبلك كل الاحتمالات بشكل مبسط وفى ضوء الجايدلاينز العالمية

❖ Causes of Nausea and Vomiting

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A) GIT causes

I. Medical causes

- **Infectious**: Acute gastroenteritis & food poisoning
- **Mucosal**
  - Acute gastritis (stomach)
  - peptic ulcer disease (stomach & duodenum (dyspepsia & Epigastric pain are clues)
  - Severe GERD (esophagus) often regurgitation rather than vomiting
  - Achalasia & esophageal stricture (usually associated with DYSPHAGIA
  - Crohn's disease (terminal ileum & colon)
  - mesenteric ischemia
- **Functional**
  - functional vomiting
  - Functional RUMINATION syndrome
  - Non ulcer dyspepsia (functional dyspepsia) occusaional
  - IBS (occasional)
  - Gastroparesis (often missed)
  - Chronic intestinal pseudo-obstruction
- **hepatobiliary causes**
  - Acute cholecystitis
  - Acute hepatitis (often missed)
- **Pancreatic causes**
  - acute pancreatitis
  - pancreatic cancer
- **Peritonitis** (medical & surgical)
- **FMF** (occasional)
- **TB Peritonitis**

II. Surgical causes (often a concern (لابد من استبعادها اولا)

Also called **{OBSTRUCTIVE CAUSES}**

- Gastric outlet (pyloric) obstruction
- Small bowel obstruction
- gatro-colic fistula : is a surgical non-obstructive cause of Fecal Vomiting

B) Non GIT causes

I. CNS causes

- Migraine (common; characteristic headache is a clue)
- Space occupying lesions
  - Brain tumours (persistent or recurrent)
    Headache in relation to vomiting (لابد من استبعاده فى حالات القئ المتكرر المرتبط بصداع)
  - Abscess
  - hemorrhage (acute)
- Hydrocephalus (occasional)
- infectious (meningitis & encphalitis)
- Labyrinthine causes (vertigo is a clue) مهمه جداااا
  - motion sickness
  - Labyrinthitis
  - Vestibular neuronitis
  - Meniere's disease
  - Tumours
- Psychiatric causes مهمه

- emotional upset (acute occasional)
- Anxiety disorders
- Depression
- conversion disorder
- Bulimia nervosa (binge eating followed by
- self induced Vomiting مهم جداا النهم العصابى
- Anorexia nervosa
- Psychogenic vomiting (diagnosis of exclusion)

II. Metabolic causes (often missed)

a) **Uremia** (AKI & advance CKD)

Persistent Vomiting is common in uremic persons (assess assciating symptoms, hiccup, itching, pallor, dyspnea, LL edema, oligura)

b) **Hypercalcemia & Hyperparathyroidism**

Often missed (remember Moans, Groans, Bones, stones in addition to osmotic symptoms like Polyuria & ↑ thirst

c) **Acute intermittent porphyria**

Rare and often associated é abdominal pain + motor peripheral neuropathy (flaccid paralysis ± confusion)

III. Endocrine causes

a) **Hyperthyroidism** (especially if Associated with secondary Hypercalcemia)

b) **DKA** (acute vomiting ± abdominal pain + kaussmal breathing + signs of dehydration in diabetic persons , RBS:↑

c) **Adrenal insufficiency** (acute & chronic)

Often associated with vague abdominal pain + orthostatic hypotension ± ↑ pigmentation, & craving for salts etc

IV. Pregnancy

- Pregnancy is an important cause; in any women in childbearing period (amenorrhoea is a clue in abscence of other symptoms
- Persistent Vomiting in pregnant woman often with association of disturbed Thyroid function function tests in abscence of any other symptoms & cause
  ---> Hyperemesis Gravidarum مهم جداااا

V. Drugs & Toxins (Common)

- Chemotherapy
- Excessive NSAIDs
- Aspirin
- Alcohol abuse
- Digoxin
- Theophylline overdose
- Narcotics overdose

VI. Miscellaneous causes

- MI (مهم جداااا ، لازم يُستبعد)

  (Acute vomiting in relation to chest pain or Epigastric pain in risky patients)
- Post-operative vomiting
- Radiation therapy to upper abdomen & lower chest
- Cyclic vomiting Syndrome
- Self induced Vomiting لابد من السؤال عليه

EVALUATION AND APPROACH

- The American Gastroenterological Association suggests a three-step approach to the initial evaluation of nausea and vomiting.
  1. **First**, attempt to recognize and correct any consequences of the symptoms, such as dehydration or electrolyte abnormalities.
  2. **Second**, try to identify the underlying cause and provide specific therapies.
  3. **Third**, if no etiology can be determined, use empiric therapy to treat symptoms.

- You must differentiate Vomiting from other similar symptoms such as **REGURGITATION** and **RUMINATION** لازم تحدد هل ده قئ ولا ارتجاع للأكل ولا اجتراء
  - Vomiting involves the forceful expulsion of stomach contents through involuntary muscular contractions.
  - In regurgitation, food is returned to the mouth without forceful contractions
  - In rumination food is returned to the mouth through voluntary contractions

- During initial consultation, the physician must rule out emergencies or any need for hospitalization.

- ⚠ WARNING signs such as chest pain, severe abdominal pain, central nervous system symptoms, fever, a history of immunosuppression, hypotension, severe dehydration, or older age in addition to VOMITING should prompt **immediate evaluation**

HISTORY

- Adetailed history of symptoms can provide clues to a diagnosis.
- Proceed in such sequence ⬇
  - Initial assessment of vomiting (onset, course, frequency, first time or not, association, self induced or not
  - Ask about regurgitation and RUMINATION

- Ask about **Associations**

- **GIT symp:** Epigastric pain, Abdominal pain if pain is present (assess severity and location and character)
  - Then ask about heart burn, dysphagia, bloating, early satiety, diarrhoea, constipation)
  - Ask about absolute constipation (without passage of flatus) if so, Intestinal obstruction is a concern

➢ بالتأكيد لازم تسأل على الم البطن وهتسأل معاه كمان على كل ال GIT symptoms زى الحموضه وارتجاع الأكل وصعوبة البلع والانتفاخ وزيادة حجم البطن والم أعلى البطن والإمساك والإسهال

- **Fever:** don't forget to ask about fever particularly if acute Vomiting ± abd pain ± diarrhoea are present
- **weight loss:** ask about weight loss (clues for Malignancy & hyperthyroidism)
- **hepatic/biliary symptoms :** such as RUQ pain, jaundice + dark urine ± itching

➲ **If GIT symptoms are negative**

Ask about **NEUROLOGICAL symptoms**

- Headache (full assessment)
- Blurring of vision
- Vertigo (sense of rotation)
- Any other neurological symptoms (weakness, parathesthesia, fits etc)

➲ **If neurological symptoms are negative**

Ask about **PSYCHIATRIC symptoms**

- Low mood, apprehension, vague medically unexplained symptoms
- History of psychiatric disease
- Then ask about eating behaviour

➲Then, ask about symptoms related to **METABOLIC causes**

★**Uremic symptoms**:

Itching, hiccup, leg swelling, dyspnea, pallor, low urine output and high BP

★ **Hypercalcemia symptoms**:

Abdominal pain, anorexia, constipation, psychic upset, bone pain, renal colic, Polyuria and excessive thirst

➲ If acute vomiting in **DIABETIC** or recently diagnosed diabetic person, ask about Abdominal pain, excessive urination, thirsty, high BG to exclude **DKA**

➲ If there is weight loss ask about **Thyrotoxicosis features** like tremors, nervousness, heat intolerance, goitre, and palpitation

➲ Aslo ask about **adrenal symptoms** like dizziness on standing from sitting position, craving for salts, associated vague pain, skin changes

➲ If female ask about **pregnancy**, last menses

➲ Then ask about **drugs intake**

➲ In middle age and old persons who came with vomiting in addition to chest pain or Epigastric pain --> you must put **ACS & MI** in your mind

➲ Finally ask about previous operations and radiation therapy

CLINICAL PEARLS

- Symptom duration should be determined because the differential diagnoses differ significantly for acute symptoms (i.e., persisting one month or less) and chronic symptoms (i.e., persisting for longer than one month).

- Abrupt onset of nausea and vomiting is suggestive of cholecystitis, food poisoning, gastroenteritis, pancreatitis, or drug-related etiologies.

- If a patient has pain, obstructive etiologies must be considered ‘‘
  Absolute constipation is a major concern

عشان لازم تستبعد الانسداد المعوي والأسباب الجراحيه

- The insidious onset of acute or chronic symptoms is suggestive of diagnoses such as GERD, gastroparesis, medication, metabolic disorders, or pregnancy.

- Symptom timing also is important (e.g., occurrence before, during, or after eating; continuous, irregular, or predictable), and the quality and quantity of vomited matter may also suggest specific etiologies.

- The presence of abdominal pain in association with vomiting usually suggests an organic cause.

- The location, severity, and timing of pain may indicate a specific etiology. Other associated symptoms also provide significant information.

- Acute nausea and vomiting without any warning signs suggests infectious or iatrogenic etiologies.

- A detailed medication history is essential.

- Food ingestions, contact with ill persons, and the presence of coexisting viral symptoms suggest an infectious etiology. Ask about associated diarrhoea , fever and abdominal pain

- فى حالة القئ الحاد المصاحب بألم فى البطن مع اسهال لابد من السؤال عن ارتفاع الحراره و هل المريض اكل اكل ملوث أو لا.

- A history of weight loss should raise concern for malignancy; however, significant weight loss can occur with sitophobia (fear of eating) secondary to functional disorders.

- فى حالات القئ المستمر لابد من السؤال عن فقدان الوزن

- Neurologic symptoms should be investigated because central nervous system etiologies of nausea and vomiting are unlikely in a patient without other neurologic symptoms.

- الاعراض العصبيه فى غاية الاهميه سواء كان القئ حاد أو متكرر ،، لازم تسأل عن الصداع و وصفه بالتفصيل والدوار والضعف فى اى ناحيه أو تنميل أو اعوجاج فى الفم أو غياب عن الوعى أو تشنجات ،،
كمان هتسأل عن زغللة العين و ضعف البصر أو اى مشاكل فى النظر أيا كانت ومعاهم ارتفاع الحرارة

- You should also analyse the headache and to elicit whether it is unilateral, or bilateral. Pulsating or not , associated photophobia & phonophobia { characters of Migraine headache }

- You should ask about headache, and associated blurring of vision ± diminution of vision, any deficits (weakness, parasthesias, fits!!) You elicit the nature of headache that increases with straining , or cough (symptoms of increased ICT related to space occupying lesions)

- You should ask about spinning (vertigo) in relation to vomiting , and you should also elicit the relation of vertigo to head movements (Labyrinthine causes)

- You should also ask about fever , confusion in relation to headache (meningitis and encephalitis)

- Ask about associated hiccups , itching , fatigue , pallor with decreased urine output ± LL edema , dyspnea in relation to high blood pressure (uremic symptoms)

- You should also elicit risk factors such as long standing uncontrolled DM, HTN , previous Renal medical disease

- هتسأل عن الزغطه والهرش وقلة كمية البول وتورم الساقين والنهجان فى اى مريض عنده قئ مستمر عشان استبعاد **الفشل الكلوي** كسبب مهم للقئ

- Ask about associated nausea, vague abdominal pain , bone Pain , depression & mood changes , in addition to Polyuria & excessive thirst (symptoms of hypercalcemia)
  - لابد من السؤال عن وجع العظم و الدخول المتكرر لحمام البول لاستبعاد ارتفاع نسبة الكالسيوم بالدم

- Ask about any history of depression , anxiety or psychiatric disease and elicit common psychiatric symptoms like low mood , excessive sense of guilt , apprehension , palpitation , sweating , etc
  - اوعى تنسى تسأل عن الأعراض النفسيه والعصبيه والأمراض العصبيه المزمنه

- Rare conditions may be considered if the history and physical examination do not support a common diagnosis.

- Cyclic vomiting syndrome is a poorly understood phenomenon that causes periods of nausea and vomiting alternating with asymptomatic periods.
  Symptoms are often associated with migraine headaches, motion sickness, or atopy.
  Cyclic vomiting predominantly affects children; however, it has been described in adults.
  Cyclic vomiting syndrome is a diagnosis of exclusion.

Physical Examination

- The physical examination should focus initially on signs of dehydration, evaluating skin turgor and mucous membranes, and observing for hypotension or orthostatic changes.

- The general examination should look for jaundice, lymphadenopathy, and signs of thyrotoxicosis.

- Fingers should be observed for calluses on the dorsal surfaces suggesting self-induced vomiting. Other suggestive findings may include parotid gland enlargement, lanugo hair, and loss of tooth enamel; however, loss of enamel may also be a consequence of long-standing gastroesophageal reflux.

- The physician should evaluate for signs of depression or anxiety, which may suggest psychiatric etiologies.

- The abdominal examination is extremely important. Abdominal distention with tenderness is suggestive of a bowel obstruction, although bloating may occur with gastroparesis. The physician should observe for visible peristalsis and pay close attention for abdominal or inguinal hernias and surgical scars.

- Auscultation may demonstrate increased bowel sounds in obstruction or decreased bowel sounds with an ileus.

- A succussion splash (heard at the epigastrium while rapidly palpating the epigastrium or shaking the abdomen and pelvis) suggests gastric outlet obstruction or gastroparesis.

- Epigastric tenderness may suggest an ulcer or pancreatitis.
- Pain in the right upper quadrant is more consistent with cholecystitis or biliary tract disease.
- **Neurologic examination** is essential. Simple maneuvers can direct the physician toward or away from a central diagnosis.

- Orthostatic changes may be the result of persistent vomiting; however, a decrease in blood pressure without a change in heart rate may suggest an autonomic neuropathy with coexisting motility disorders.

- Any deficit on examination of cranial nerves or a patient's gait suggests brainstem lesions, which may result in gastroparesis.

- Ophthalmoscopy should be performed to evaluate for elevations in intracranial pressure, because any cause of increased intracranial pressure can stimulate brainstem emesis centers. Abnormal findings should prompt immediate neuroimaging.

- **Finally,** observation for nystagmus may suggest a disorder of the labyrinthine system

❖ CLUES IN HISTORY TO REACH THE CAUSE OF VOMITING

I. Onset of symptoms

- Abrupt
  - Cholecystitis, food poisoning, gastroenteritis, illicit drugs, medications, pancreatitis
- Insidious
  - Gastroesophageal reflux disease, gastroparesis, medications, metabolic disorders, pregnancy

II. Timing of symptoms

- Before breakfast
  - Ethyl alcohol, increased intracranial pressure, pregnancy, uremia
- During or directly after eating
  - Psychiatric causes
  - Peptic ulcer disease or pyloric stenosis
- One to four hours after a meal
  - Gastric outlet obstructions (e.g., from peptic ulcer disease, neoplasms), gastroparesis
- Continuous
  - Conversion disorder, depression
- Irregular
  - Major depression

III. Nature of vomited matter

- Undigested food
  - Achalasia, esophageal disorders (e.g., diverticulum, strictures)
- Partially digested food
  - Gastric outlet obstruction, gastroparesis
- Bile
  - Proximal small bowel obstruction

- Feculent or odorous
  - Fistula, obstruction with bacterial degradation of contents
- Large volume (> 1,500 mL per 24 hours)
  - Suggests organic rather than psychiatric causes

IV. If there is associated abdominal pain

- Right upper quadrant
  - Biliary tract disease, cholecystitis
- Epigastric
  - Pancreatic disease, peptic ulcer disease
- Severe pain
  - Biliary disease, pancreatic disease, peritoneal irritation, small bowel obstruction
- Severe pain that precedes vomiting
  - Small bowel obstruction

V. Associated symptoms/findings

- Weight loss
  - Malignancy (significant weight loss may also occur secondary to sitophobia in gastric outlet obstructions and peptic ulcer disease)
- Diarrhea, myalgias, malaise, headache, contact with ill persons
  - Viral etiologies
- Headache, stiff neck, vertigo, focal neurologic deficits
  - Central neurologic causes (e.g., encephalitis/meningitis, head injury, mass lesion or other cause of increased intracranial pressure, migraine)
- Early satiety, postprandial bloating, abdominal discomfort
  - Gastroparesis
- Repetitive migraine headaches or symptoms of irritable bowel syndrome
  - Cyclic vomiting syndrome

❖ Diagnostic workup

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I. Laboratory tests

1) **Complete blood count:**

Looking for Leukocytosis in an inflammatory process, microcytic anemia from a mucosal process

2) **Metabolic profile including**

- Na, K, Calcium, Mg, BUN, creatinine and ABG
- Complete liver function tests (LFTs)
- Consequences of nausea and vomiting (e.g., acidosis, alkalosis, azotemia, hypokalemia)
- ***Hypercalcemia*** is only confirmed after checking of calcium level
  - If calcium is high check Serum P & PTH to exclude ***Hyperparathyroidism***
  - Check Protein electrophoresis /BM exam in old persons to exclude ***multiple myeloma***
- ***Renal insufficiency*** is diagnosed by Urea & creatinine initially
- If concerned about ***acute viral hepatitis*** (recurrent vomiting , fever , vague abdominal pain , jaundice & dark urine) , it must be confirmed initially by complete liver function tests (shooting enzymes + high bilirubin) also INR & virology markers should be done

3) **Erythrocyte sedimentation rate :** To detect inflammatory process

4) **Abdominal ultrasonography:** If there is Right upper quadrant pain associated with gallbladder, hepatic, or pancreatic dysfunction

5) **Pancreatic/liver enzymes :** For patients with upper abdominal pain or jaundice

6) **Pregnancy test:** For any female of childbearing age

7) **Serum Protein/albumin:** Chronic organic illness or malnutrition

8) **Specific toxins** { Toxicology screen} : if suspicion of potentially toxic medications

9) **Thyroid-stimulating hormone**: For patients with signs of thyroid toxicity or unexplained nausea and vomiting

10) **Radiographic testing :** Supine and upright abdominal radiography Plain X-ray to exclude Mechanical obstruction(surgical causes)

11) Further testing

- Esophagogastroduodenoscopy

  If concerned about: Mucosal lesions (ulcers), proximal mechanical obstruction
- Upper gastrointestinal radiography with barium contrast media

  If concerned about mucosal lesions and higher-grade obstructions; evaluates for proximal lesions
- In suspected Achalasia: do manometry
- Small bowel follow-through

  If concerned about mucosal lesions and higher-grade obstructions; evaluates the small bowel to the terminal ileum
- Enteroclysis

  If concerned about Small mucosal lesions, small bowel obstructions, small bowel cancer
- **Computed tomography on abdomen & pelvis with oral and intravenous contrast**

  If concerned about intestinal Obstruction, it might be the optimal technique to localize other abdominal pathology
- Gastric emptying scintigraphy

  If concerned about Gastroparesis
- Antroduodenal manometry

  If concerned about Primary or diffuse motor disorders.
- **Magnetic resonance imaging of the brain**: If concerned about Intracranial mass or lesion

N.B:

❖ If no diagnosis is determined after initial evaluation, gastric motility studies (e.g., gastric emptying scintigraphy, cutaneous electrogastrography, antroduodenal manometry) may be considered.

However, the utility of such tests is controversial, and many experts suggest a trial of antiemetic or prokinetic medications instead.💎

❖ **Finally,** if all organic, gastrointestinal, and central causes of nausea and vomiting have been explored, psychogenic vomiting should be considered.