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A CASE REPORT: DOMPERIDONE INDUCED BREAST ABSCESS

Breast Surgery

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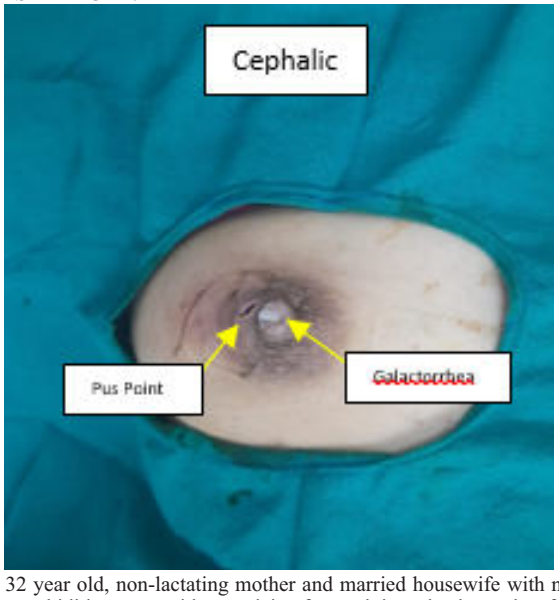
ABSTRACT

Domperidone is a prokinetic drug used for diabetic gastro paresis, hiccoughs, and vomiting. As it has preferential action on the D2 receptors of the upper gastrointestinal tract hence neurological side effects, and hyperprolactinemia are rarely reported. It is not known to cross the blood brain barrier and hence, neurological side effects are rare. Stomach cramps, diarrhea, constipation, mastalgia are the rarer side effects which have been observed. We would like to report a case of domperidone induced galactorrhea in a young female who presented with galactorrhea and breast abscess along with pituitary microadenoma.

KEYWORDS

Domperidone; drug induced galactorrhea; galactorrhea; prolactin; pituitary microadenoma

CASE REPORT:



A 32 year old, non-lactating mother and married housewife with no premorbidities came with complain of mastalgia and galactorrhea for 5-6 months. The mastalgia gradually agrravted mainly on right side. This was followed by appearance of a lump along with surrounding redness over right subareolar region with aggravation of pain.

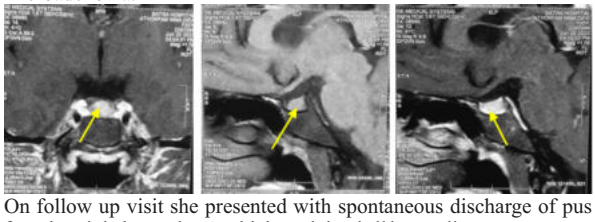
On detailed history she gives h/o consumption of Tab Pantoprazole with Domperidone during last 1-2 year on and off for complains of heart burn & nausea.

On examination patient has B/L galactorrhea and lump in right breast in subareolar region with surrounding erythema which is tender.

On further evaluation with USG breast there is large ill defined area of heteroechoic echotexure involving right supero-lateral quadrant and in subareolar region with moderately dilated glandular and ductal elements with heteroechoic contents within. On CDFI there is mild increase in vascularity. Similar but mild features compared to right breast also noted in in left breast. There is also retraction of the nipple on bilaterally with no evidence of axillary lymphadenopathy.

On hormonal evaluation she was found to have high serum prolactin level (285.70 ng/ml).

On imaging with MRI brain, there is a focal small hypointense lesion of size 4.9 mm x 3.6 mm noted on right side of pituitary gland showing delayed enhancement in dynamic contrast study suggestive of microadenoma.



On follow up visit she presented with spontaneous discharge of pus from her right breast lump which explained all her earlier symptoms.

Going by the sequence of events it is evident that Domperidone a D_2 antagonist induced the pituitary gland which leads to hyperprolactinemia which caused the galactorrhea and subsequently leading to breast abscess due to infection of accumulated breast milk in view of non-lactating status of the lady. She was subsequently managed with drainage of the breast abscess and supported with intravenous and oral antibiotics to control the infection along with cessation of consumption of Domperidone and with simple observation for pituitary microadenoma.

DISCUSSION

The regulation of PRL secretion is quite complex because it involves many substances, including neurotransmitters, neurohormones, neuropeptides, metabolic substrates, and systemic hormonal signals.

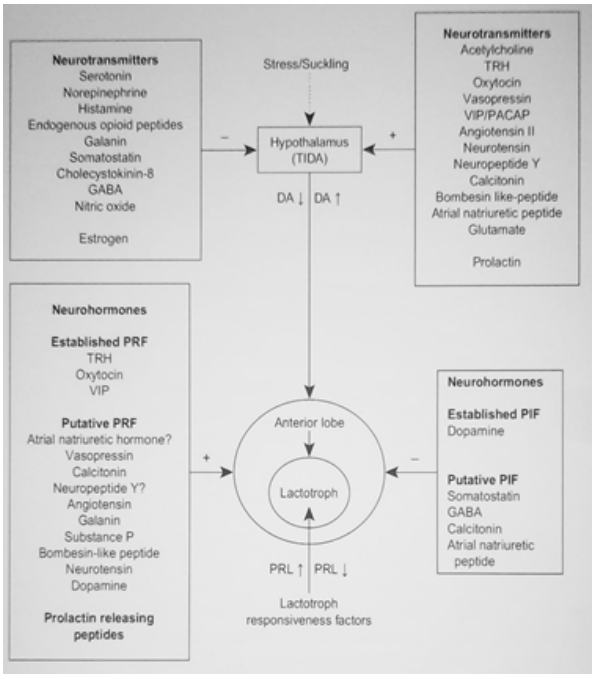
The causes of hyperprolactinemia can be divided simply into physiologic, pharmacologic, and pathologic causes.

Pregnancy is the most common cause of hyperprolactinemic amenorrhea, and there is a 10-fold increase in PRL during the third trimester. Normal lactation is also associated with a marked elevation of serum PRL.

PRL levels increase after exercise, meals, and stimulation of the chest wall. Physical and psychologic stress increases the secretion of PRL, even if the levels rarely exceed 40 mg/L.

As predicted from the physiologic dopaminergic inhibition of PRL

secretion, treatment with dopamine receptor antagonist drugs commonly induce hyperprolactinemia[5], with levels rarely exceeding 150 mg/L. These drugs include antipsychotics (phenothiazines, butyrophenones, and atypical antipsychotics), antidepressants (tricyclic, monoamine oxidase [MAO] inhibitors, and selective serotonin reuptake inhibitors [SSRIs]), opiates, cocaine, gastrointestinal medication (metoclopramide, domperidone, and ranitidine), and antihypertensives (verapamil, methyldopa, and reserpine). PRL levels may also be mildly elevated after the administration of estrogens. Similarly, occupational exposure to heavy metals and some over-the-counter herbal or alternative remedies may cause an increase in PRL.



For this reason, a comprehensive drug history of the hyperprolactinemic patient is essential. To determine if treatment with a given drug is the cause of hyperprolactinemia, it has been suggested to withdraw it for at least 72 hours if this can be done safely or to switch to an alternative drug. To rule out pathologic causes of hyperprolactinemia, it is important to evaluate kidney and liver function and exclude hypothyroidism and polycystic ovary syndrome.
Domperidone[1] is a dopaminergic (D2) receptor antagonist with peripheral activity restricted to the upper gastrointestinal tract. It has several inhibitory effects on motility, including reduction of lower esophageal sphincter and intragastric pressures. These effects result from suppression of acetylcholine release from myenteric motor neurons by antagonizing the inhibitory effect of dopamine on these neurons.

Dopamine receptor antagonists such as metoclopramide and domperidone are effective as prokinetic agents. The drug is absorbed orally with high bioavailability. It undergoes hepatic and intestinal first pass metabolism. The $T^{1}/_{2}$ of the drug is around 7-12 hours and undergoes predominant renal excretion.

In contrast to metaclopramide, domperidone predominantly antagonizes the D2 receptor without major involvement of other receptors. It has lower ceiling anti-emetic and prokinetic actions in doses of 10-20 mg thrice a day.

Domperidone does not readily cross the blood brain barrier to cause extra pyramidal side effects, yet exerts effects in the parts of the central nervous system that lack this barrier, such as those regulating emesis (chemoreceptor trigger zone), temperature etc. Extra pyramidal syndromes and hyperprolactinemia have been reported rarely. Stomach cramps, diarrhea, constipation, mastalgia, are the other side effects which have been observed occasionally.

One of the first reports on domperidone induced galactorrhea[2,3] was from Great Britain in 1983. Another was from India in 1991. Gynaecomastia has been reported, more in case of non-specific D2 antagonists such as metoclopramide. This was noted in a male infant associated with renal failure (renal failure contributory to the hyperprolactinemia). A study was conducted to compare the effects of domperidone and metoclopramide on prolactin secretion in women[4]. It was found that nulliparous women showed highest response with drug intake as compared to multiparous women who showed the same response to various doses of the same drug.

CONCLUSION

Domperidone is a drug used along with most PPIs for relief of common symptoms of acid reflux and nausea. However galactorrhea is an adverse drug reaction not commonly encountered with this entity. Hence, physicians should be aware of such uncommon side effects of common drugs to avert unnecessary worry and intervention.

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REFERENCES

1. Tripathi KD. Emetics, antiemetics and other gastro-intestinal drugs. Essentials of Medical Pharmacology. 5th ed, Vol. 45. New Delhi: Jaypee Brother's; 2003. p. 602-4.
2. Cann PA, Read NW, Holdsworth CD. Galactorrhoea as side effect of domperidone. Br Med J (Clin Res Ed) 1983;286:1395-6.
3. Agarwal P, Gupta AK, Goyal V. Galactorrhea-A rare side effect of domperidone. J Indian Acad Clin Med 2011;12:225-6.
4. Nijhawan S, Rai RR, Sharma CM. Domperidone induced galactorrhea. Indian J Gastroenterol 1991;10:113.
5. Brown TE, Fernandez PA, Grant LJ, Hutsul JA, McCoshen JA. Effect of parity on pituitary prolactin response to metoclopramide and domperidone: implications for the enhancement of lactation. J Soc Gynecol Investig 2000;7:65-9.