Summary

Nipple discharge is defined as a fluid that flows or is expressed from the mammary ducts (Goodson et al, 1998).

Nipple discharge is the third most common breast complaint for which women seek medical attention, after lumps and breast pain. (O'Grady et al, 2000).

The reported incidence of nipple discharge in women seeking breast care ranges from 3% to 7.4% (Goodson et al, 1998).

Patients with nipple discharge had a higher relative risk for cancer than the asymptomatic population, and patients with nipple discharge associated with a mass or skin change had an even higher relative risk of cancer. Rarely were bilateral, multicentric discharges found to be caused by cancer (Dietz et al, 2002).

The incidence of carcinoma for patients with discharge and a mass was 61.5% compared with 6.1% for patients with discharge alone (Gulay et al, 1994).

Breast cancer was found to be the etiology of the nipple discharge in 4% to 14.3% of cases in several series (Dawes et al, 1998).

*** Nipple discharges are classified into two main categories:*

I. Physiologic Nipple Discharge which can be caused by exogenous or endogenous hormones, medications, direct stimulation, stress, or endocrine abnormalities. *Although the cause of the hormonal influence may be pathologic*, as is the case with prolactinoma, the ductal system

itself has no abnormality; so *the resultant discharge is classified as physiologic (Dietz et al, 2002).*

- Galactorrhea
- Hormonal variation
- Late follicular and luteal phase of menstrual cycle
- Pregnancy / Post-lactational
- Bloody discharge of pregnancy
- Montgomery gland discharge
- Mechanical stimulation
- Physical and emotional stress
- Orgasm
- Eating (especially midday, high protein meal)

Causes of physiologic nipple discharge (Falkenberry, 2002).

II. Pathologic Nipple Discharge is caused by an abnormality of the duct epithelium. The discharge is spontaneous or at least easily expressible. The color of the discharge is usually clear, serous, or bloody, although pathologic nipple discharge can present as other colors. All patients with pathologic nipple discharge need a thorough evaluation to rule out cancer (Dietz et al, 2002).

- Intraductal Papilloma
- Duct ectasia
- Fibrocystic disease
- Ductal epithelial hyperplasia
- Intraductal carcinoma
- Invasive (usually papillary) ductal carcinoma

Causes of pathologic nipple discharge (Bauer, 1998).

Nipple discharge is considered as a complex diagnostic challenge for the clinician because a variety of diseases can manifest as nipple discharge. The importance of nipple discharge for both the patient and the physician is that nipple discharge often raises concern for the possibility of two serious conditions breast cancer and a pituitary tumor (Sakorafas, 2001).

The first step in the evaluation of a nipple discharge is to determine whether the discharge is pathologic or physiologic (Morrow, 2000).

The normal way of investigation is by triple assessment which comprises of:

1. *Clinical assessment*
2. *Laboratory investigations and imaging studies.*
3. *Invasive diagnostic techniques and histopathology (Argy et al, 2O02).*

The evaluation and treatment of physiologic nipple discharge should be focused on identifying the external factor that is stimulating the breasts and reducing the relative or absolute hyperprolactinemia (Dietz et al, 2002).

Evaluation and management of patients with pathologic nipple discharge aims to identify carcinoma when present, and in benign cases, stop the discharge when bothersome (King et al, 2000).

For patients with nipple discharge in whom pathology was not found at duct excision and for patients with peripheral papillomas, close follow-up is essential (Dawes et al, 1998).

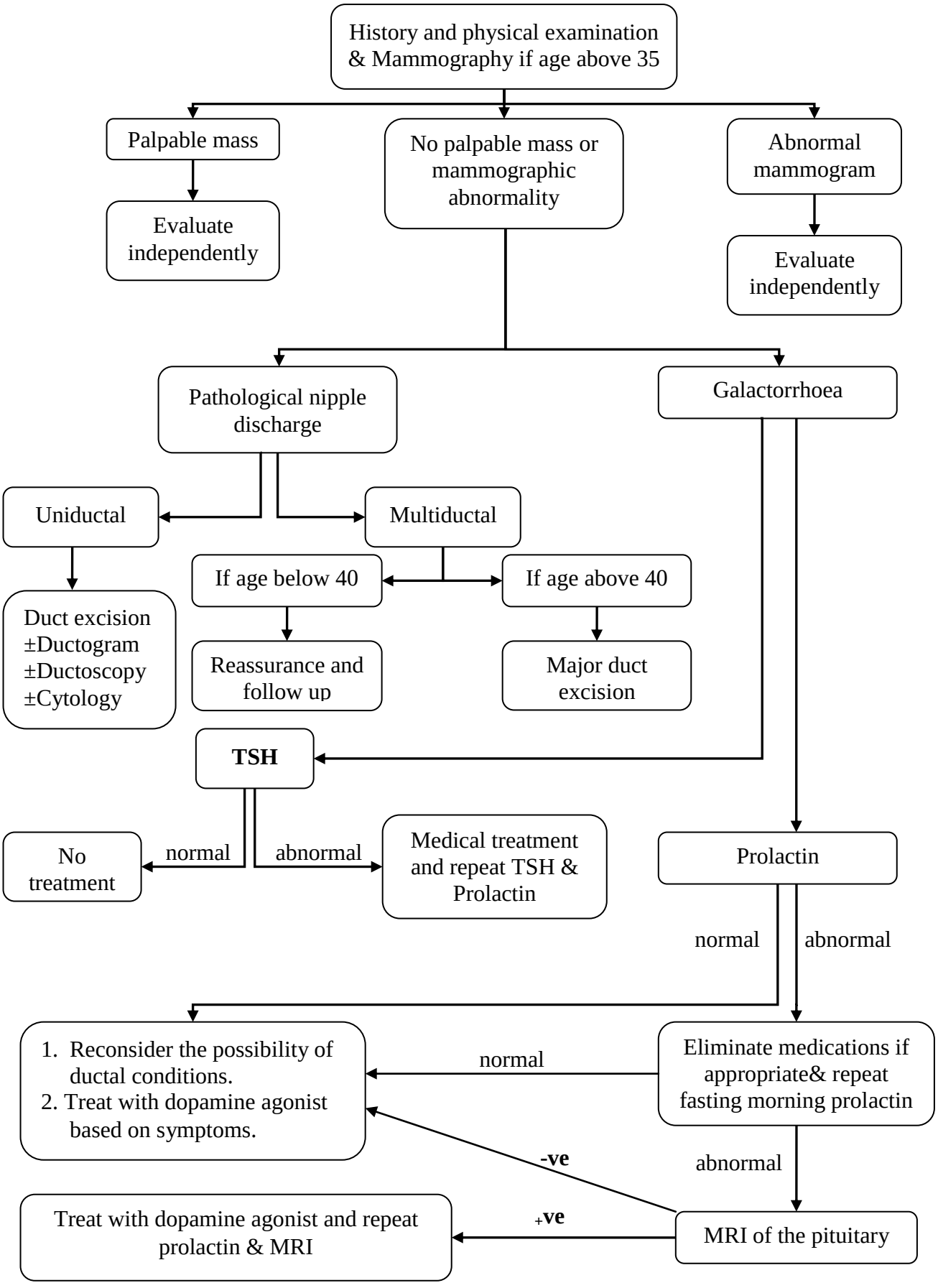

Fig. 10.1. *Algorithm for the evaluation and the management of nipple discharge (Modified after Falkenberry, 2002).*