

Special Topic - Vascular Leg Ulcer and its Management

Vascular Leg Ulcer and its Management (Part II)

Doppler ultrasound

Doppler ultrasound is a useful and non-invasive diagnostic test. In the absence of strong, palpable foot pulses, it is used to assess blood supply to lower limb. Besides, it can differentiate arterial from venous insufficiency. Therefore, it is commonly used to rule out any arterial insufficiency before compression therapy is commenced. Arterial insufficiency is confirmed by obtaining the Ankle: Brachial Index (ABI). Venous insufficiency should have an ABI greater than 0.9. If ABI is less than 0.9 there is already a mild degree of arterial involvement.

HOW TO DO AN ANKLE - BRACHIAL INDEX

All you'll need is a sphygmomanometer and a handheld Doppler. Follow these steps:

1. With the patient supine, take the blood pressure in both arms. Use the higher of the two systolic pressures as the brachial pressure in the ratio.
2. Place the blood pressure cuff on the patient's leg just above the malleoli. Place the Doppler probe at a 45 degree angle to the dorsalis pedis or posterior tibial artery.

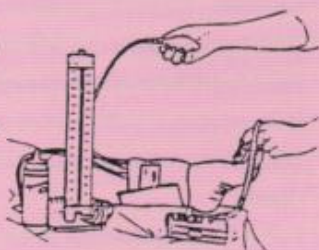
3. Inflate the cuff until the Doppler signal stops. Keeping the Doppler probe over the artery, slowly deflate the cuff until the Doppler signal returns. Record the number as the ankle systolic pressure.

4. Divide the ankle systolic pressure by the higher of the two arm systolic pressures to obtain the ankle-brachial index (ABI)

$ABI = \frac{\text{Systolic ankle pressure mmHg}}{\text{Systolic arm pressure mmHg}}$

Interpret the results according to these guidelines:

- * 0.9-1 normal
- * 0.75-0.9 moderate disease
- * 0.75-0.5 severe disease
- * <0.5 limb-threatening.



Source: Sieggreen M.Y. et al., 1996

calcification causes falsely high ABI.

Management

Management should focus on the client as a whole by addressing the underlying cause, not just the ulcer. The primary goals are to improve blood supply to the lower limbs and to promote wound healing by secondary intention.

Venous ulcers

Compressive bandage and leg elevation are fundamentals to relief venous hypertension and aching pain.

Compression helps heal ulcers by supporting superficial veins, preventing capillary leakage and enhancing the effect of the calf muscle pump. However, arterial insufficiency, diabetes and rheumatoid arthritis should be ruled out first to prevent tissue hypoxia and necrosis. External compression can be applied through bandage in a spiral or figure-of-eight turn, compression stockings

or mechanical pumping devices. Advice clients to apply compression bandage or stockings before getting up from the bed in the morning or after a period of bed rest. The bandage should be applied from the base of the toes to the tibial tuberosity just below the knee in a



even pressure and 50% overlap with the previous turn.

Bony prominence need to be protected with padding before bandaging. Neurovascular condition of lower limbs should be monitored in a regular basis. It is characterized as the "five Ps"- pain, pallor, pulselessness, paresthesia and paralysis. Compression bandage should be removed if tingling or numbness in legs or toes occur.

For wound management, goals should be directed at keeping the ulcer infection free, absorbing any excess discharge and maintaining a moist wound environment. Absorbent dressing like hydrocolloid, foams, gels can be used to maintain moist wound healing.

Arterial ulcers

To increase the circulation to the area, it can be done surgically or medically (with oral pills such as Trental). Surgical treatment like arterial

* Note: The ABI isn't reliable in patient with diabetes because arterial

bypass surgery and angioplasty may be needed to improve blood supply. Locally, keeping the tissue base moist, infection free and void of necrotic debris. Hydrocolloid dressing and hydrogels can be used to rehydrate arterial ulcer and enhance autolytic debridement. Alginate dressings are effective in treating ulcers on the toes.

General advice to Clients

Client should be advised daily cleansing of lower limbs with mild soap and water. Lower limbs should be protected from extreme hot or cold and any kinds of injuries, e.g. no tapes, shaving, friction. Client should report promptly for any cuts or bruises on legs, signs of cellulitis, e.g. redness, heat and swelling to health care professionals.

For venous ulcers, advice client to elevate legs when at rest, regular ambulation or exercises and



avoid prolonged standing in order to reduce venous congestion and leakage. With arterial ulcers, client is strongly advised to give up smoking and to modify lifestyle in order to reduce the risk factors. Proper footwear and regular chiropody should be recommended.

Conclusion

This article summarized the pathophysiology, distinguish features, assessment tools and management guidelines of venous and arterial ulcers. With more understanding on vascular leg ulcers, hoping that nurses could be more alert to clients' needs and provide expert and holistic care.

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Reference

- Cameron J. (1996) Venous and arterial leg ulcers, *Primary Health Care*, March Vol.6 No. 3.
- Harris A.H., Brown-Etris M. and Troyer-Caudle J. (1996). Managing Vascular Leg, *American Journal of Nursing*, Vol.96, No1, p38-44.
- O'Hare L.J. and Moffat C. (1996) Doppler ultrasound and compression bandaging, *Primary Health Care*, December Vol. 6 No. 11.

Urge Incontinence and its management

Introduction

Incontinence of urine is considerable important to people. This is simply because it is a troublesome and embarrassment problem which often results in social disability. The incidence of urinary incontinence is higher than fecal. The occurrence of urinary incontinence is especially common in female. It occurs around 12% in children and 20% in old age and menopause. The age and cultural difference will also affect the incidence of incontinence.

Incontinence is a symptom but not a disease. According to the International Continence Society, incontinence is defined as "a condition in which involuntary loss of urine is a social or hygiene problem and is objectively demonstrable". It is classified into acute or chronic type while urge incontinence is classified as chronic.

Urge incontinence is terrible that it comes so urgent that the patient has a strong desire to void. It comes so strong that you cannot stop the urine from coming and it has to leak out finally. Urge incontinence usually result from either a sensory disturbance or motor disturbance. The sensory type takes around 10% and mostly occurs due to the inflammation,



calculus or neoplasm, whilst the motor type is 20% and it is often due to the detrusor instability.

Mechanism of urinary control

During the normal micturition, the detrusor muscle contracts and forces the urine out of the bladder. At the end of micturition, the external sphincter and bulbocavernosus muscle contracts and forces the urine in the urethra either out or back into the bladder. If the bladder neck is obstructed or the sphincter muscle is weak, there would be urine dribbling. Urinary control depends on two main factors. The first one is the presence of a competent sphincter mechanism, which is able to resist the changes in intrabdominal pressure. Secondly, the capacity to inhibit a bladder contraction until it is convenient to void. Incontinence may occur if there is a loss of the normal inhibitory capacity, sphincter weakness or a combination of both.

Predisposing factors of urge incontinence

- * Idiopathic : the cause is unknown
- * Pathology of bladder : such as tumor or obstruction of outlet
- * Psychosomatic or emotional problem
- * Irritants : such as caffeine or alcohol
- * Obstetrical conditions : such as multiparity or vaginal deliveries
- * Obesity
- * Post pelvic surgery
- * Neurological condition

Assessment

* History

A comprehensive history plays the most important part for diagnosing the condition before giving treatment. The elimination pattern such as

frequency, volume and the pattern of voiding and bowel habit should be recorded. The symptoms and previous management of the urinary or bowel problems must be asked. Operations, gynaecological, obstetrical and neurological history should also be taken into consideration. History taking can aid to accurate diagnosis and help to develop a treatment plan. It also acts as a baseline to monitor the progress.

***Home environment:** such as toilet facilities, setting, location and the accessibility of bathroom.

***Dietary and fluid intake**

***Drug therapy**

The client should be discussed with the health care team about their quality of life and the expectation of the treatment.

Investigation

Every client should have a thorough assessment on neurological, mental and physical condition. For female patients, vaginal examination is performed to detect for any abnormalities such as prolapsed, mass, or hormonal changes of vulva and introitus. The perineal skin of the client should be observed for any excoriation or sore.

For the male patients, it is necessary to inspect the prostate, penis and scrotum to detect for any abnormalities or enlargement. A digital examination of the rectum should be done for detection of any fecal impaction, haemorrhoid or anal tone defect.

Urine studies such as routine analysis and culture may be needed to exclude any diabetic problem and urinary tract infection.

Urodynamic studies will be performed if necessary to confirm the diagnosis.

Majority of incontinent clients will deliberately isolate themselves and refuse to participate in social activities. They may appear anxious and irritable by their incontinence problem. Actually, clients' attitude to incontinence will affect the treatment plan. Therefore, counselling, support and sympathy from the health care professionals is very important in

order to regain their confidence. Education and explanation also plays a major part in the treatment plan.

Management

The most important treatment is the removal of contribution factors.

* General measures : such as advice on dietary intake, fluid control and empty the bladder before going out.

* Pelvic floor exercise : to strengthen the pelvic floor muscle.

* Hormonal replacement : especially for the postmenopausal women.

* Pharmacological treatment : such as anticholinergic agent

* Bladder training : to restore the clients to a normal voiding pattern without any urgency or incontinence.

* Electrical stimulation, bio-feedback

* Surgery : such as augmentation cystoplasty

Conclusion

Urge incontinence is a symptom not a diagnosis. Clients' attitude on the incontinence is still a major problem. With advanced technology, updated knowledge and people awareness, the health care professionals should have positive attitudes and awareness on the treatment of incontinence. Continence service should be developed and become a recognised area of specialized nursing practice in Hong Kong.

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References

Doughty, D.B. (1991). *Urinary and Fecal Incontinence*. Mosby Year Book : London.

Mackay, et al. (1983). *Illustrated Text Book of Gynaecology*. W.B. Saunders Co. : Australia.

Norton, C. (1996). *Nursing for Continence*. Beaconsfield Publishers Ltd : UK.

Seminar and course information

Certificate Course on Continence Care for Health Care Professionals

Date: Part I - Theory and Demonstration 12th October to 24th October, 1998

Part II - Practical Attachment (as arranged by groups with course directors)

Venue: United Christian Hospital

Deadline for application: 15th July, 1998

Enquires: Ms Becky Chan Sau Kuen, Continence Advisor, UCH

23rd Annual Meeting of the IUGA

Date: 18-21 November, 1998

Venue: Libertador Hotel, Buenos Aires, Argentina

Enquires: MC Congresos y Exposiciones

Av.Pte.Roque Saenz Pena 720 "B"
(1035) - Buenos Aires, Argentina

7th National Conference on Incontinence

Date: 26 - 28 November, 1998

Venue: Rydges Canberra Hotel, Canberra, ACT, Australia

Enquiries: Shan Fleming

Event Solutions

PO Box 165 Arana Hills Q 4054

1/65 Gilston Street Keperra Q 4054