Chapter 1
The history and importance of venous disease in modern practice

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Introduction

The modern management of venous disease is inextricably linked with advances in physiological measurement and imaging. Indeed, early accounts of disorders describe anomalies and only in the mid-20th century was there an attempt to merge 'form and function'. Varicose veins have been reported for thousands of years with one of the earliest accounts of serpent-shaped dilatation of the lower limbs from about 1552BC in the Ebers papyrus (Figure 1). The first reliable description of intervention for extremity varices appears in a Turkish textbook, *Imperial Surgery*, written in 1465AD, although procedures appear to have taken place during the earlier Byzantine period. A published case history of venous thrombosis is recognised at the Bibliothèque Nationale in Paris, affecting a Normandy man aged 20 years in 1282AD. The patient sustained unilateral oedema with ulceration and exudation, and although able to walk only with crutches initially, the symptoms eventually settled leaving only mild long-term leg throbbing. Probably the most significant early work was by Fabricus in 1603 and his student

Figure 1 The Ebers papyrus was discovered in Egypt in the 1870s and contains 877 recipes for diseases or symptoms.

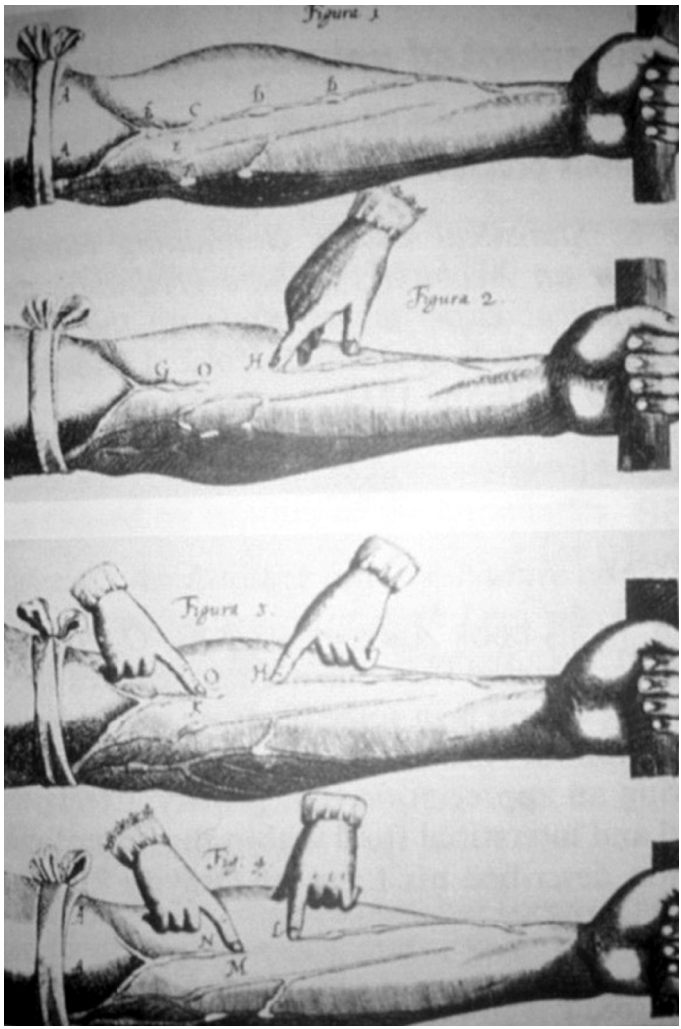

Figure 2 Illustration of venous valves from Harvey's 1628 book *De Moto Cordis*.

Harvey in 1628, who described the structure and function of venous valves and the circulatory system respectively (Figure 2).

Par é in the 16th century underpinned surgical principles and these were developed by Trendelenburg (Figure 3) and others around the

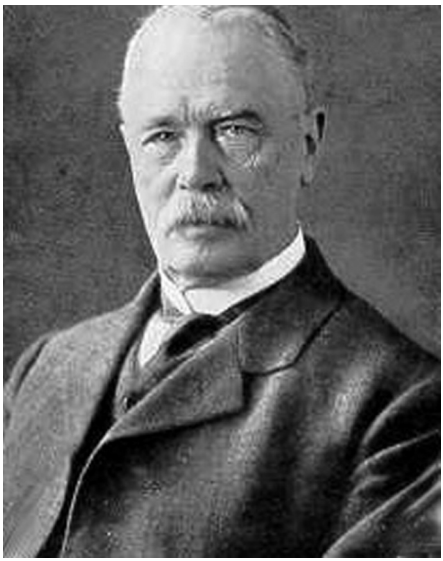

Figure 3 Friedrick Trendelenburg (1844-1924) was Surgeon-in-Chief at Leipzig.
Courtesy of www.historiadelamedicina.org.

beginning of the 20th century, leading to Keller and Mayo in 1905/6 performing the first ablation of the great saphenous vein, thus providing a gateway to the modern era [1, 2].

Historical landmarks

Investigation of venous disorders

Clinical examination with use of the Trendelenberg test and tourniquet has been the mainstay of diagnosis of superficial venous incompetence, even in recent years, despite the inaccuracies in differentiation of saphenopopliteal and perforator disease. The recognition of the physiological implications of deep venous incompetence remained elusive until the era of pulsed Doppler ultrasound imaging and flow measurements. Plethysmography was developed in the mid-20th century

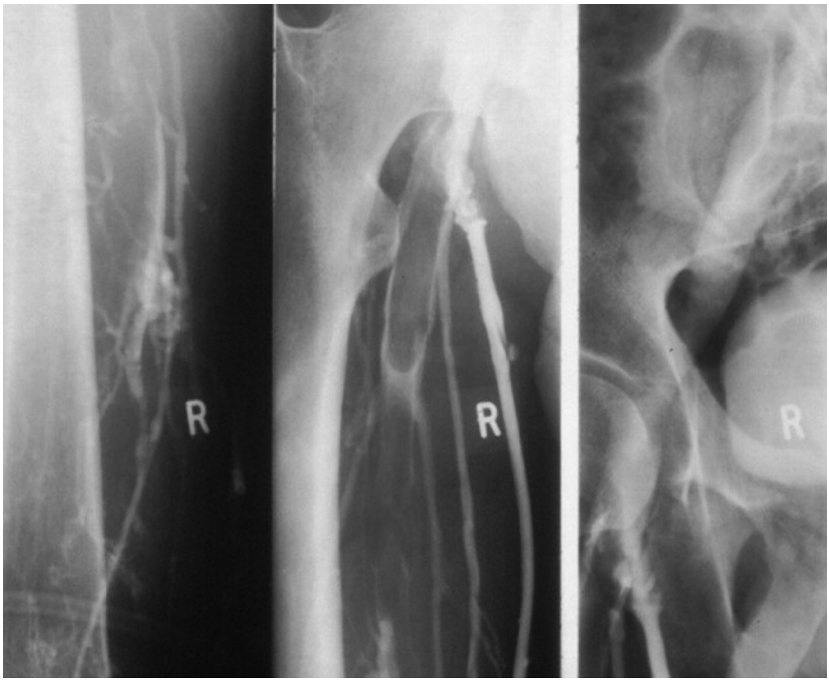

Figure 4 Ascending venogram with thrombus in the femoral vein.

and is based upon measurment of venous refill times using strain gauge, electrical impedance or skin colour changes. Difficulties with reproducibility and standardisation has meant that plethysmography has limited use in clinical practice but is valuable in venous research, particularly where continual assessment of individual patients is required.

Contrast venography was popularised in the 1960s and even now is regarded by many as the gold standard for the diagnosis of deep vein thrombosis (Figure 4). Descending femoral venography enabled diagnosis of deep venous incompetence based upon distal reflux of contrast, although the clinical implications of single or multiple valvular reflux are not clear. Venography or phlebography is still of value in planning surgery for pelvic venous obstruction and determining the origin of atypical lower limb varicosities, but its use has largely been superseded by duplex imaging.