

Chronic Venous Disease in a Cohort of Healthy UK Asian Men

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Objectives. This group has previously reported that UK Asians are significantly less likely to undergo surgery for lower limb venous disease than age and sex matched Caucasians. The aim of the present study was to estimate the prevalence of lower limb chronic venous disease (CVD) in the UK Asian male population.

Design. A prospective, epidemiological survey.

Materials and methods. 100 unselected Asian men attending a local Mosque were assessed for the evidence of lower limb CVD, involving the collection of data on history and clinical signs and objective assessments of venous pathophysiology using lower limb venous ultrasonography and venous photoplethysmography (PPG).

Results. On clinical examination, 80 limbs (in 50 subjects) had clinical evidence of CVD, the majority of cases consisting of varicose veins (CEAP C2). No limbs had either healed or active ulceration (C5/6), and only 2 limbs had thread veins (C1). Eight subjects had had previous venous surgery. The venous refill time (vRT) measured by PPG was lower in limbs with CVD. On venous ultrasound, reflux was present in 73/200 limbs, affecting primarily the GSV system, with only 7 limbs having deep venous reflux.

Conclusions. Present data strongly suggest that the low rates of superficial venous surgery in UK Asians is not because they are inherently less likely to develop CVD.

Keywords: Ethnicity; Caucasian; Asian; Varicose veins; Chronic venous disease.

Introduction

Chronic venous disease (CVD) of the lower limb is a common problem, affecting up to 40% of the general population.¹ Whilst rarely life- or limb- threatening, the treatment of this condition consumes large quantities of healthcare resources, with ~40,000 operations performed in the NHS in England in the year 2004–5 (Data for 2004–5, www.doh.gov.uk). Given that healthcare spending can only be finite, it is important that the allocation of funds be directed to areas of actual need and accurate knowledge of the epidemiology of a condition is essential for this to be achieved.

The epidemiology of CVD in the UK has been well characterised in the majority White population by the Edinburgh Vein Study (EVS), a cross sectional survey of the prevalence of all grades of lower limb CVD in

randomly selected, age-stratified men and women between the age of 18 and 64. It found that CVD was very common in both men and women: specifically the age-adjusted prevalence of hyphenweb and reticular veins was 79–85%, varicose veins (VV) 26–33% and the skin changes of chronic venous insufficiency (CVI) and ulceration (CVU) was 5–7%.¹

By contrast, the epidemiology of lower limb venous disease in Non-White ethnic groups is poorly understood, both in the UK and worldwide. Early reports from rural Africa^{2,3} and India⁴ found that cases of lower limb VV were uncommon and suggested that VV and CVI are mainly a 'Western' affliction, focusing on differences in lifestyle as an explanation.^{5,6} Much of this early data was however anecdotal, based on personal clinicians experiences working in hospitals and clinics in these areas. In addition, they date from a time when there was no accepted method of classification of lower limb venous disease or objective tests to confirm the diagnosis and few direct comparisons with White populations were made. Although this makes it difficult to make firm statements, the suggestion from these is that CVD occurs

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less frequently in non-Whites with significant geographical variations in disease prevalence noted, suggesting a possible link with ethnic group.⁷

The catchment population of our own institution in Birmingham, comprises ~20% non-White (majority Asian Pakistani and Indian) and the impression gained from our clinical practice was that patients from this ethnic minority group did in fact present with the full range of clinical manifestations of lower limb CVD. In our UK multicultural society, where ethnic minority groups make up ~8% of the UK population (National census data 2001), this gap in our knowledge of the epidemiology of CVD may result in the inappropriate allocation of health care resources.

The aim therefore was to conduct a pilot study to estimate the prevalence of lower limb CVD in our local Pakistani male population.

Methods

This study of venous disease formed part of a larger feasibility study looking at the epidemiology of peripheral arterial and venous disease in ethnic minority groups in Birmingham. The data concerning peripheral arterial disease has been published separately.⁸

Following ethical approval, male volunteers from a local mosque were invited to attend a mobile clinic in the community centre at the mosque. After informed consent obtained with the help of a local interpreter, a structured history and examination, lower limb venous ultrasound and photoplethysmography (PPG) were performed.

Structured history (via interpreter): A clinical history of CVD was determined with specific reference to a diagnosis of or treatment for varicose veins (VV), current or previous leg ulcers (CVU), previous deep venous thrombosis (DVT) and pulmonary embolism (or a history suggestive of DVT). Due to difficulties with interpretation, specific questions concerning lower limb symptoms were not included. In addition information was gained as to the place of birth, duration of UK residence and occupation both in the UK and in the country of origin.

Body mass index (BMI): Height was measured without shoes to the nearest 0.5 cm and weight measured without shoes and with the subject lightly clad to the nearest 0.1 kg. BMI was calculated by dividing the weight (kg) by the height² (m²).

Classification of venous disease: Both lower limbs were exposed and examined for evidence of venous disease, and each graded according to the CEAP clinical grade⁹: C0 = no venous disease, C1 = telangiectasia/reticular veins, C2 = truncal VV, C3 = venous oedema,

C4 = venous eczema, hyperpigmentation, lipodermatosclerosis, C5 = healed venous ulceration and C6 = active venous ulceration.

Venous ultrasound: Each scan was conducted in an identical manner to a standard protocol, with the subject standing supported and the examined limb non-weight bearing and slightly flexed at the knee. The lower limb veins in each limb were systematically examined using a portable ultrasound machine using a linear array 5–10 MHz probe (SonoSite 180 Plus, SonoSite Ltd, Hitchin, UK). Both the deep (common [CFV] and superficial femoral [SFV], above [AKPV] and below knee popliteal veins [BKPV]) and superficial (great [GSV] and short saphenous veins [SSV], and saphenofemoral [SFJ] and saphenopopliteal [SPJ] junctions) veins were assessed for patency and presence of reverse flow. Reflux was induced by manual calf augmentation and significant reflux defined as >0.5 sec reverse flow on the Doppler spectrum.

Venous photoplethysmography: Quantitative digital PPG (The Dopplex[®], Huntleigh Healthcare) was used to measure post-exercise venous refill time (vRT) in both lower limbs in the seated position using the method described previously,¹⁰ with a lower vRT indicating worse venous physiology. Each test was performed twice and an average taken.

Statistical analysis: Statistical analysis was performed using SPSS 11.0 (Statistical Package for Social Sciences Inc, Chicago, IL, USA). For non-normally distributed data, non-parametric tests were used, with Mann Whitney U test for continuous data and Chi-squared test for categorical data.

Results

The results presented are for the first 100 men over the age of 55 years accepting the invitation to participate in this study. It is estimated that approximately 20% of the 5000 Muslim men living in the catchment area of this mosque are weekly attenders. More than 70% of these men are aged over 55 years, thus the cohort represents ~15% of eligible men attending this particular mosque.

The median [IQR] age of the subjects was 67 [62.3–72.8] years. All had been born in the Indian Subcontinent originating from the Kashmiri region of Pakistan (76), other Pakistani regions (22) or Bangladesh (2). The median [IQR] length of UK residence was 41 [38–43] years. A summary of demographic and clinical data for the cohort is given in Table 1.

History: Nine subjects gave a history of having VV, with eight having had previous superficial venous surgery (SVS), although no detail on the type of

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