Is there a link between vulval cancer and blood group?

K. J. Rolfe, *Ph.D., BSc (Hons) Clinical Research Fellow*; **J. J. Nieto,** *BSc MRCOG Clinical Lecturer*
W. M. N. Reid, *MRCOG Consultant*; **C. W. Perrett,** *Ph.D. Non-clinical Lecturer*
A. B MacLean, *MD FRCOG Professor*

University Department of Obstetrics and Gynaecology, Royal Free and University College Medical School, London (UK)

Summary

Risk factors for squamous cell vulval cancer (SCC) remain unclear though there have been associations with lichen sclerosis, smoking, and vulval intraepithelial neoplasia (VIN). We studied 191 patients who had been referred to the vulval clinic at the Royal Free Hospital and who had both blood group and histopathology results available. Seventy-two percent of patients with SCC and non-neoplastic epithelial disorders of the vulva (NNEDV) were found to be in blood group A with only 17% in blood group O. Those with SCC associated with VIN had only 30% in blood group A with 50% in blood group O. The control population showed that 38% of the population were in blood group A and 43% were in blood group O. Our results suggest that blood group A is prevalent in patients with SCC associated with NNEDV but not in those women with squamous vulval cancer and associated VIN.

Key words: Lichen sclerosus; VIN; Vulval cancer; Blood groups; Progression.

Introduction

Risk factors for squamous cell vulval cancer (SCC) remain unclear though there have been associations with smoking, vulval intraepithelial neoplasia (VIN), chronic inflammatory disorders and other genital carcinomas e.g. cervical cancer. Recent morphological and epidemiological data have indicated that there are two pathways or two separate cancers [1], with approximately one-third being associated with VIN (often found in younger women and associated with human papillomavirus) and the remainder associated with non-neoplastic epithelial disorders of the vulva (NNEDV) (lichen sclerosus (LS) and/ or squamous cell hyperplasia (SCH)).

Some cancers appear to have a preponderance for certain blood groups. Gastrointestinal cancer is associated with group A [2] and ovarian cancer shows a relative incidence of 1.17 in women with blood group A [3].

Materials and Methods

To explore if blood groups are associated with vulval disease we studied 191 patients who had been referred to the vulval clinic at the Royal Free Hospital (RFH) and who had both blood group and histopathology results available. Thirty-nine patients had a diagnosis of SCC, 56 had LS, 37 had VIN, eight had lichen planus and 51 had other diagnoses (e.g. non-specific inflammation, psoriasis, eczema and basal cell carcinoma). Using the haematology database it was possible to extract a control group of female patients over the age of 56 years who were recorded as having a cross match for clinical reasons. The age of 56 years was selected to coincide with the mean age of patients in the LS group.

Results

Twenty-nine of the SCC were associated with NNEDV and 72% (21/29) of these were found to be in blood group A with only 17% (5/29) in blood group O. Ten of the SCC were associated with VIN and only 30% (3/10) of these were in blood group A with 50% in blood group O. The control population showed that 38% of the population were in blood group A and 43% were in blood group O. Statistical significance was demonstrated when comparing the RFH control group and SCC associated with NNEDV ($p = 0.0008$); this was also demonstrated when comparing the control group and LS patients ($p = 0.003$). Table 1 demonstrates the relationship of other vulval conditions and the percentage of patients in blood groups A and O compared to the UK general population and the control group.

Discussion

Our results suggest that SCC associated with NNEDV is prevalent in patients in blood group A. There also appears to be a trend towards patients with NNEDV to be in blood group A when compared to the general population and the control group and other vulval conditions. However, it must be noted that this is a small study based on a selected population, although others in the past have also commented on a prevalence for blood group A in 'vulval dermatoses' [5].

Table 1. — *Vulvar conditions and the percentage of our study population in blood group A when compared to the general UK population*

Diagnoses	Group A	Group O
LS	57%	13%
Lichen planus	62.5%	25%
VIN	35%	50%
SCC		
– associated with NNEDV	74%	15%
– associated with VIN	27%	45%
Non-specific and other	31%	54%
Royal Free Hospital control population	37.6%	43%
UK Population[4]	41.7%	47%

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This difference observed in blood groups between SCC associated with VIN and SCC associated with NNEDV appears to confirm the two different SCC entities; such observations have been confirmed by other clinico-pathological parameters and molecular evidence [6]. Larger studies are now underway to assess the relevance of blood group and the development of SCC in NNEDV lesions.

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Address reprint requests to:
J. J. NIETO, BSc, MRCOG
Subspecialist Fellow in Gynaecological Oncology
Department of Obstetrics and Gynaecology
Princess Anne Hospital
Coxford Road
Southampton SO16 5AY (U.K.)