

## Skin tags and the atherogenic lipid profile

M A Crook

### Abstract

**This report details four patients who had skin tags, mainly on their torso, neck, and axillae, and who also displayed an abnormal lipid profile. All showed an increased serum triglyceride (fasting > 1.70 mmol/litre) and a decreased high density lipoprotein (HDL) cholesterol (< 1.1 mmol/litre in women and 1.0 mmol/litre for men) concentration. The displayed lipid profile is also known as the atherogenic profile and is associated with insulin resistance, type 2 diabetes mellitus, and an increased risk of cardiovascular disease. Two of the patients had impaired glucose tolerance and one had type 2 diabetes mellitus. Three of the individuals had coronary artery disease. Skin tags might be a useful clinical sign that could alert clinicians to screen such individuals for abnormal lipids, type 2 diabetes mellitus, and cardiovascular disease.**

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Skin tags are known to be more common after the age of 40 years.<sup>1</sup> There have been a few reports in the literature that the presence of skin tags is associated with diabetes mellitus.<sup>2,3</sup> We report four cases where skin tags were found to be associated with the atherogenic lipid profile; that is, an increased serum triglyceride concentration (fasting > 1.70 mmol/litre) and a decreased serum high density lipoprotein (HDL) cholesterol (< 1.1 mmol/litre for women or 1.0 mmol/litre for men).<sup>4</sup> We also review the literature concerning skin tags and suggest that they may be a useful clinical sign for individuals at risk of cardiovascular disease.

### Case 1

A 65 year old man, an ex-smoker with a family history of premature coronary heart disease (CHD), was seen by a consultant lipidologist. He was not diabetic (he had a fasting blood glucose < 5.5 mmol/litre) but at the age of 51 years he had undergone a coronary artery bypass graft (CABG) for triple vessel disease. His fasting serum lipid profile on presentation was: cholesterol, 6.82 mmol/litre; triglyceride, 1.77 mmol/litre; and HDL cholesterol, 0.90 mmol/litre. His blood pressure was 120/80 mm Hg, his body mass index (BMI) was 31.3 kg/m<sup>2</sup>, and skin tags were noted mainly on his back and neck area. He was treated with aspirin 150 mg once daily (OD), bisoprolol 10 mg OD, isosorbide mononitrate 60 mg twice daily (BD), and Simvastatin 20 mg nocte.

### Case 2

A 68 year old man, a non-smoker with a family history of premature CHD, was seen in the lipid clinic. At the age of 60 years he had undergone a coronary angioplasty later followed by a CABG. His fasting serum lipid profile on presentation was: cholesterol, 7.44 mmol/litre; triglyceride, 4.31 mmol/litre; and HDL cholesterol, 0.98 mmol/litre. His blood pressure was 146/88 mm Hg, he had bilateral arci, a BMI of 28.8 kg/m<sup>2</sup>, and skin tags were noted on his torso, mainly on his back. An oral glucose tolerance test revealed impaired glucose tolerance. He was recommended aspirin 75 mg OD, bisoprolol 10 mg OD, and Simvastatin 10 nocte initially.

### Case 3

A 69 year old woman, a non-smoker, was seen in the lipid clinic. Her fasting serum lipid profile on presentation was: cholesterol, 6.60 mmol/litre; triglyceride, 3.23 mmol/litre; and HDL cholesterol, 1.06 mmol/litre. At the age of 63 years she had an acute myocardial infarction and coronary angioplasty. In addition, she had recently undergone an anterior resection for a bowel carcinoma (Dukes's B). She was hypertensive with a blood pressure of 178/98 mm Hg, BMI of 34.2 kg/m<sup>2</sup>, and skin tags were noted on her torso, mainly on her back. An oral glucose tolerance test revealed impaired glucose tolerance. She was treated with aspirin 75 mg OD, atenolol 50 mg OD, amlodipine 5 mg OD, and Simvastatin 10 mg nocte initially.

### Case 4

A 39 year old man, a non-smoker with a family history of diabetes mellitus, was seen in the lipid clinic. He had diabetes mellitus and his medication consisted of acarbose 100 mg three times daily (TDS), metformin 500 mg TDS, and Bezafibrate 400 mg nocte. His fasting serum lipid profile on presentation was: cholesterol, 6.21 mmol/litre; triglyceride, 11.3 mmol/litre; and HDL cholesterol, 0.76 mmol/litre, with a glycaated haemoglobin (HBA1c) of 12.5%. His blood pressure was 160/90 mm Hg, his BMI of 53 kg/m<sup>2</sup> indicated severe obesity, and skin tags were noted on his torso, mainly on his back and axillae area.

### Discussion

We present four patients all of whom had an atherogenic lipid profile—an increased serum triglyceride concentration (fasting > 1.70 mmol/litre) and a decreased HDL cholesterol (< 1.1 mmol/litre for women or 1.0 mmol/litre for men) but who also manifested skin tags.

Department of  
Chemical Pathology,  
Guy's, St Thomas's,  
University Lewisham  
Hospital, London SE13  
6LH, UK  
M A Crook

Correspondence to:  
Dr Crook, Department of  
Chemical Pathology, 5th  
Floor Tower, Guy's Hospital,  
London SE1 9RT, UK  
martin.crook@  
gstt.sthames.nhs.uk

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Skin tags are thought to be relatively common skin lesions and it has been reported that they might reflect insulin resistance states.<sup>5-8</sup> All our patients were either obese or overweight and/or had diabetes mellitus or impaired glucose tolerance. This confirms an earlier report that in a large study of patients with skin tags over 25% of individuals had diabetes mellitus and a further 8% had impaired glucose tolerance, although there was no association between the number or localisation of the skin tags in that study.<sup>9</sup> The exact prevalence of skin tags in this country is unclear.

To our knowledge, this is the first report describing an association of skin tags with the atherogenic lipid profile. This lipid profile is thought to be strongly associated with atherosclerosis and cardiovascular disease. The atherogenic lipid profile is associated with features of the insulin resistance syndrome.<sup>10 11</sup> We should also state that the atherogenic profile is associated with diabetes mellitus, particularly the type 2 form, but not exclusively so. Why skin tags occur is not clear, although the human papillomavirus (HPV) has been implicated because HPV DNA has been found in about 88% of skin tags in one study.<sup>12</sup>

We suggest that skin tags may be an important physical sign that should alert the clinician to look for possible impaired glucose tolerance or diabetes mellitus in patients who manifest them. In addition, the presence of the atherogenic lipid profile should also be looked

for in these individuals. Clinical signs can aid the selection of patients for healthcare screening and skin tags may be an indicator of higher cardiovascular risk that could be useful in general practice. Further large scale studies are necessary to confirm our preliminary findings and to see whether patients with skin tags have insulin resistance and are consequently at increased risk of cardiovascular disease.

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