

How Acrochordons Predict Metabolic Characteristics and their Response to Structured Lifestyle Modification. The STAMP (Skin Tag and Metabolic Phenotype) Study.

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Introduction

Skin tags are small, soft, pedunculated, hyperproliferative benign skin growths. They are typically seen in areas of skin flexors; the neck, axillae, inframammary, trunk and groin. They are a recognised feature of insulin resistance, but the extent to which they predict an adverse metabolic profile or the response to structured lifestyle modification in severely obese adults is not known.

Aims

We sought to quantify prospectively differences in anthropometric and metabolic characteristics of severely obese adults with skin tags versus those without skin tags. Additionally we wanted to determine whether the presence of skin tags predicted the response to an eight week structured lifestyle programme and whether they predict an adverse metabolic profile in severely obese adults.



Photo 1: Skin tags located in the axillae

Methods

Weight (kg), height (cm), blood pressure (mmHg), fasting glucose (mmol/L), lipid profiles and a detailed dermatological assessment were conducted in a cohort of bariatric patients undergoing a structured lifestyle modification programme. Baseline differences between those with and without skin tags were measured using a two-sample t-test, while differences in the response to the lifestyle intervention were quantified using linear regression.

Results

100 bariatric patients (mean age 50±11.4 years, 31% male) were enrolled. Those with skin tags were heavier but also taller, with lower BMI and had higher HbA1c and blood pressure as expected. The intervention led to improvements in fitness and adiposity overall. Patients with skin tags recorded larger improvements in comparison to those with no skin tags, although there was no statistical significance. Logistic regression was performed to determine whether the presence of skin tags influenced the changes in weight (kg), waist circumference (cm), BMI (kg/m²), systolic and diastolic blood pressure (mmHg), total cholesterol (mmol/L), LDL (mmol/L), HDL (mmol/L), trig (mmol/L), glucose (mmol/L) and HbA1c (mmol/mol) observed following the 8 week exercise intervention. Having adjusted for age, gender and the baseline measure of each variable, skin tags were found to influence the improvement observed in weight (kg), systolic and diastolic blood pressure (mmHg), HbA1c (mmol/mol) and waist circumference significantly (p<0.05 for each variable), but not in total cholesterol (mmol/L), LDL (mmol/L), HDL (mmol/L), Trig (mmol/L), glucose (mmol/L) or BMI (kg/m²).

Conclusion

In severely obese adults, skin tags are an important marker of metabolic adversity and may predict the response to a lifestyle modification-programme. In this study there was a non-significant trend to heavier weight but paradoxically lower BMI in those with skin tags. Additionally patients with skin tags had a larger mean waist circumference. Other studies have reported similar results [1,2]. In this study with skin tags recorded a higher mean systolic and diastolic blood pressure, although it was not of statistical significance. Unexpectedly, those with skin tags recorded lower mean total cholesterol, high density lipids and low density lipids. This may be due to confounding by differences in the use of lipid lower therapy. Finally, those with skin tags recorded fasting glucose and HbA1c in comparison to those without skin tags.

References

- [1] Rasi, Soltani-Arabshahi et al. 2007
[2] Sari, Akman et al. 2010