Muir-Torre Syndrome - When to Refer for Genetic Testing - Full Clinical Guideline

Reference no.: CG-Derm/2023

1. Introduction

Muir Torre syndrome (MTS) is a genetic condition characterised by the presence of sebaceous neoplasms and visceral malignancies (colon, endometrial, small intestine, urothelial, and others). Germline mutations have been detected in mismatch repair genes (MMR) leading to microsatellite instability. The most common mutation is MSH2. The other proteins involved are MLH1, MSH6 and PSM2.

The majority of MTS cases have an autosomal dominant inheritance with high penetration and variable expression. There are also cases of an autosomal recessive pattern of inheritance. MTS is a variant of autosomal dominant hereditary nonpolyposis colorectal cancer also known as Lynch syndrome.

The sebaceous neoplasms could be:

- Sebaceous adenoma
- Sebaceous epithelioma
- Sebaceous carcinomas
- Keratoacanthoma
- Basal cell carcinoma with sebaceous differentiation
- Cystic sebaceous tumours

2. Aim and Purpose

To offer guidance for clinical staff on when to refer patients with sebaceous neoplasms for genetic testing for Muir-Torre syndrome.

3. Definitions, Keywords

Muir- Torre syndrome (MTS)

4. Histology

All sebaceous tumours will be stained with four validated microsateillite immunostains: MLH1, PMS2, MSH2 and MSH6. If the immunostains are preserved then Muir Torre syndrome is less likely but still possible, and the Mayo MTS score algorithm should still be

used**. If the immunostains are absent then Muir Torre syndrome is likely and the patient should be referred to genetics, irrespective of the Mayo MTS score.**

Guideline

For patients with sebaceous neoplasms, the Mayo MTS score algorithm below should be used as criteria for referral to genetics.

Variable	Score
Age at sebaceous neoplasm diagnosis	
60 or older	0
Younger than 60	1
Total number of sebaceous neoplasms	
1	0
2 or more	2
Personal history of any Lynch related cancer**	
No	0
Yes	1
Family history of any Lynch related cancer	
No	0
Yes	1

The possible range is 0-5 but patients with score of ≥ 2 should be offered molecular genetic testing.

** Lynch related cancers include: gastric, pancreatic, hepatobiliary tract, small intestine, colorectal, ovarian, endometrial, urinary tract, renal cell, breast, prostate, lung and some brain tumours.

After diagnosis of MTS, the patient should be offered yearly skin surveillance with a dermatology consultant.

Refer to:

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5. References

- Cappel et al. A clinical scoring system to identify patients with sebaceous neoplasms at risk for the Muir-Torre variant of Lynch syndrome. *Genet Med.* 2014; **16** (9):711-6
- John AM, Schwratz RA. Muir-Torre syndrome (MTS): An update and approach to diagnosis and management. *JAAD.* 2016; **74** (3): 558-66

6. Documentation Controls

Reference Number CG-Derm/2023	**Version: 2**		**Status** Final	
Version / Amendment History	Version	Date	Author	Reason
	2	14.12.23	Dr. Anusha Panthagani, Consultant Dermatologist	Guideline reviewed, no changes made
Intended Recipients: Dermatology Clinicians				
Training and Dissemination: E-mail				
Development of Guideline: Dr Anusha Panthagani, Consultant Dermatologist Dr. Kid Wan Shum, Consultant Dermatologist				
Consultation with: Dr Mohnish Suri, Consultant Clinical Geneticist Dr. Rand Hawari, Consultant Histopathologist				
Linked Documents:				
Keywords: Muir- Torre syndrome				
Business Unit Sign Off			**Group: Dermatology Medical Division** **Date:** Dec 2023	
Divisional Sign Off			**Group:Medicine Division** **Date:**	
Date of Upload			December 2023	
Review Date			December 2026	
Contact for Review			Dr. Anusha Panthagani	