An audit on quality of reporting, MMR testing and concordance between pre-operative and post-operative final histological diagnosis of endometrial carcinomas

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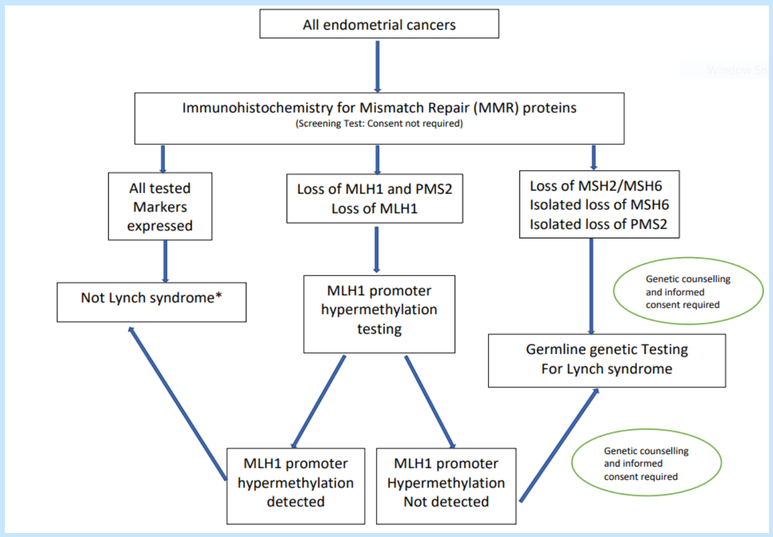
Introduction

- Uterine cancer - 4th most common cancer in females in the UK - 9,700 new cases every year (2016-2018).
- The standard treatment - total hysterectomy +/- pelvic lymph node sampling, post-surgical chemotherapy and/or radiotherapy.
- Recommendation of 95% compliance - The Royal College of Pathologists (RcPath) Dataset.
- Preoperative histopathological diagnosis on endometrial biopsies of paramount significance for the further patient management.
- The National Institute of Health and Care Excellence (NICE) recommended testing for Lynch syndrome to all persons diagnosed with endometrial cancer (Oct 2020), and initial tumour tissue screening by immunohistochemistry for MMR proteins, with further MLH1 promoter hypermethylation if needed.
- The British Gynaecological Cancer Society (BGCS), the British Association of Gynaecological Pathologists (BAGP), and the RCPath created the proposed pathway and reporting guidelines endorsed by NICE.



Audit standards

- Resection case reports must have at least 95 % compliance with the core items recommended by RCPath "Dataset for Histological Reporting of Endometrial Cancer" (2017).
- All patients with endometrial cancer should have MMR (Mismatch Repair Deficiency) protein IHC testing.

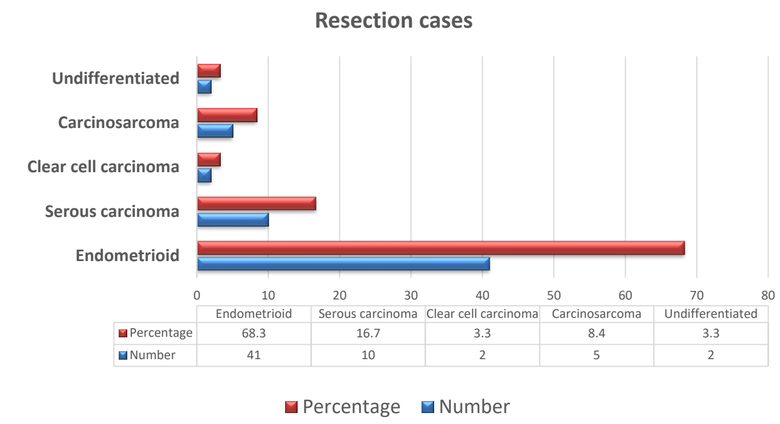
Material and methods

A retrospective audit (1/1/2021 – 1/1/2022) was performed with our database search to identify endometrial cancer resection specimens.

There were 68 resections with a diagnosis of endometrial carcinoma.
5 cases did not have previous biopsy (resection performed for other reason, incidental finding of endometrial carcinoma), and 3 case did not have residual malignancy found on resection.

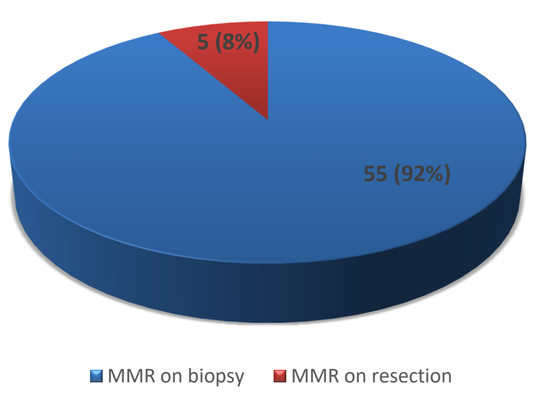
In total we have analysed 60 cases.

Results

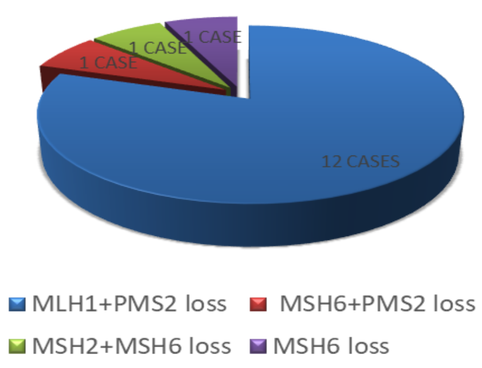


Core data item	% compliance
Primary tumour	
Maximum dimension of tumour	73 (44/60)
Tumour type	100
Tumour grade	100
Depth of myometrial invasion	100
Tumour-free distance to serosa	100
Presence or absence of cervical stromal invasion	98
Presence or absence of uterine serosal involvement	100
Presence or absence of lymphovascular invasion	100
Presence or absence of parametrial involvement	100
Presence or absence of vaginal involvement	100
Provisional FIGO stage	100
Adnexal structures (if removed)	
Involved or not	100
Normal or abnormal	100
Abnormality specified	100
Lymph nodes	
Sampled or not	100
Number retrieved from each site	100
Number involved each site	100
Omentum	
Sampled or not	100
Involved or not	100
Peritoneum	
Sampled or not	100
Involved or not	100

Histological type	Biopsy	Resection	% Concordance	
G1 Endometrioid	25	21	**84**	4 upgraded to G2
G2 Endometrioid	8	7	**87.5**	1 downgraded to G1
G3 Endometrioid	5	3	**60**	1 downgraded to G2, 1 upgraded to Carcinosarcoma
Serous carcinoma	12	10	**83.3**	2 reported as Carcinosarcoma
Clear cell carcinoma	2	1+1*	**100**	*1 reported mixed clear cell + endometrioid
AEH at least	4	4	**100**	All Endometrioid G1
Undifferentiated	2	2	**100**	
Carcinosarcoma	2	2	**100**	
	60	51	**Total Concordance 85% (51/60)**	



25% cases showed MMR mutation, followed by further molecular testing



Discussion

- In our audit histopathological reports for endometrial carcinoma for hysterectomy specimens showed high compliance with the core data items comparing with previous departmental audit (2011), which is attributed to introduction of MDS proforma.
- Our audit showed that concordance between endometrial biopsy and final post-operative hysterectomy diagnosis (histological type and grade) was achieved in 51/60 (85%) patients. This is a higher percentage than in some other studies ranging from 60.75% to 77.5%. Discordance is mainly due to limited superficial endometrial sampling which makes difficult to achieve accurate histological diagnosis in the biopsy.
- For all cases MMR testing has been performed (60/60; 100%), and 15 (25%) showed MMR mutation:

12 MLH1+PMS2 loss (11 patients showed MLH1 promoter hypermethylation, and 1 absence of hypermethylation).
1 MSH2+MSH6 loss (referred, but no data available yet, patient was diagnosed with SCC of cervix at the same time).
1 loss of MSH 6 only (referred to germline testing)
1 MSH6+PMS2 loss (referred to germline testing, possible).
Lynch syndrome due to PMS2 gene deletion).

Conclusions

- A full set of core data items has been recorded in all cancer resections.
- There is a high level of concordance between the histological diagnosis on endometrial biopsy and at hysterectomy.
- Immunohistochemistry testing to identify MMR protein deficiency has been performed in all cases.

References

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