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# Using Non-echoplanar diffusion weighted MRI in detecting cholesteatoma following Canal Wall Down mastoidectomy – Our Experience with 20 patient episodes

## Introduction

- There is not presently a clear role for the use of DWI in surveillance patients following CWD surgery as cavities can be examined through direct microsotomscopy
- There remains a cohort of patients that present with symptoms suggestive of potential recurrent disease and equivocal findings on clinical examination
- In this situation imaging by non-echoplanar DWI may provide additional information to guide the management of such patients
- At present, there is no data exploring specifically the diagnostic performance of DWI in patients with previous CWD surgery when combined with appropriate clinical evaluation.
- This study therefore aims to evaluate the performance of DWI in the detection of residual or recurrent disease in patients who have had a previous CWD mastoidectomy.

## Methods

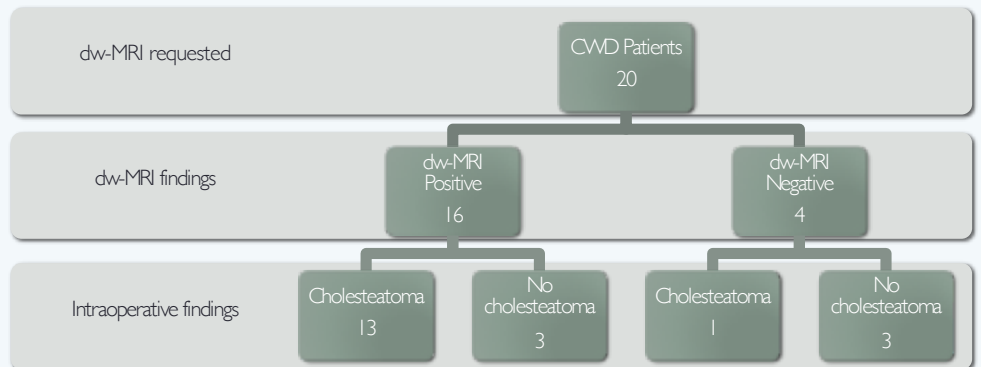
From a prospectively kept mastoidectomy database select cases were chosen that met the inclusion criteria. A patient episode; was defined as a DWI followed by a subsequent mastoid exploration in a patient who had previously had a documented CWD mastoidectomy.

A total of 20 patient episodes suitable for analysis.

DWI were requested pre-operatively in these patients for a variety of reasons:

- Incomplete examination (n=7)
- Previous aggressive disease, DWI to assess for recurrence (n=6)
- New or persistent ontological symptoms (n=4)
- Pre-operative planning (n=3)

The outcome of these DW MRI along with intra-operative findings are outlined below:



## Results

	dw-MRI +ve	dw-MRI -ve	
Surgery +ve	13	1	Sensitivity = 93%
Surgery -ve	3	3	Specificity = 50%
	Positive Predictive Value = 87%	Negative Predictive Value = 75%	

## Conclusions

### Indications

- Unable to examine ear
- New symptoms with normal examination findings
- Pre op planning

### > 90% Sensitivity

- Useful in surveillance and pre-op planning

### NB

- Debris can cause false +ves
- <2mm residual disease cannot be detected
- Close communication between surgeons and radiologists is essential. Otology MDTs can facilitate this
- While there is a clear role for DWMRI in certain CWD cases it should not be used routinely