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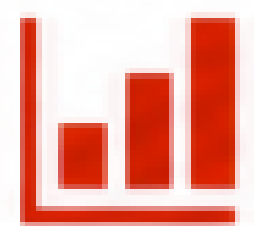
Aims

- To describe ultrasound differences between benign and malignant solid adnexal lesions using IOTA and MUSA terminology and to assess the interobserver agreement of these sonographic features.



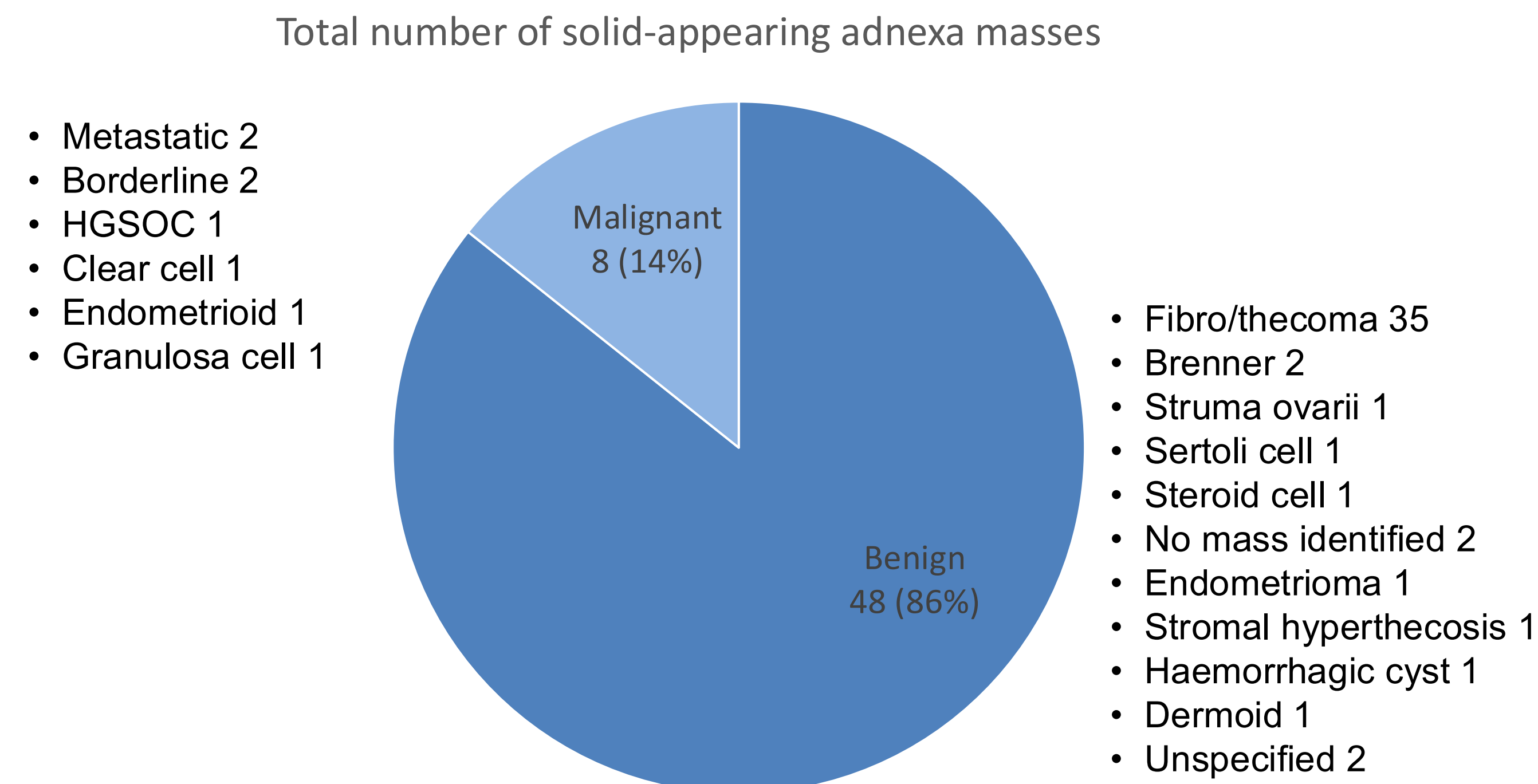
Methods

- Retrospective cohort study at referral centre in Australia over 4 years
- Images of ‘solid-appearing’ adnexal masses were evaluated independently by two sonologists.
- Interobserver agreement was assessed using 1) unweighted Cohen’s kappa (κ) for binary variables and multiple categorical variables, 2) weighted κ for ordinal variables, and 3) intraclass correlation coefficient (ICC) for continuous variables.



Results

- Of the 56 cases of 'solid-appearing' adnexal lesions:



Key findings (see Table):

- Malignant lesions were more likely to have:
 - ❖ Irregular outline
 - ❖ Non-uniform echogenicity
 - ❖ Cystic component (which is more likely to be irregular)
 - ❖ Higher Colour Score
 - ❖ Ascites
- Internal shadowing was present in both malignant cases (37.5% for Observer 1 and 25.0% for Observer 2) and benign cases (29.2% for Observer 1 and 41.2% for observer 2).
- Interobserver agreement was substantial for: *presence of a cystic component* (91% agreement, Cohen's Kappa (κ) 0.79; 95% CI 0.61-0.96); *absence of vascularity* (84% agreement, κ 0.67; 95% CI 0.49-0.86) and *mass outline* (89% agreement, κ 0.64; 95% CI 0.37-0.90) .
- There was moderate agreement for the *type of shadowing* present (57% agreement, κ 0.43).

Conclusion

- Malignant tumours were more likely to have an irregular outline, non-uniform echogenicity, a cystic component, vascularity and ascites
- Both malignant and benign solid tumors have similar rates of acoustic shadowing
- Moderate to substantial interobserver agreement for US characteristics

Table: Characteristics of solid adnexal lesions

	Benign (n=48)		Malignant (n=8)	
	Observer 1	Observer 2	Observer 1	Observer 2
Irregular margins	5 (10.4%)	5 (10.4%)	6 (75%)	4 (50%)
Uniform echogenicity	26 (54.2%)	34 (70.1%)	0 (0%)	1 (12.5%)
Presence of internal septations	4 (8.3%)	5 (10.4%)	2 (25.0%)	2 (25.0%)
Presence of hyperechoic foci	14 (29.2%)	11 (22.9%)	1 (12.5%)	0 (0%)
Presence of a cystic component	6 (12.5%)	11 (22.9%)	8 (100%)	8 (100%)
Shadowing present (all types)				
Nil shadowing	2 (4.2%)	11 (22.9%)	3 (37.5%)	5 (62.5%)
Shadowing present	46 (95.8%)	37 (77.1%)	5 (62.5%)	3 (37.5%)Type of
Type of shadowing (if present)				
Fan shaped	18 (37.5%)	13 (27.1%)	0 (0%)	1 (12.5%)
Lateral/edge shadowing	14 (29.2%)	4 (8.3%)	1 (12.5%)	0 (0%)
Internal shadowing	14 (29.2%)	20 (41.2%)	3 (37.5%)	2 (25.0%)
Colour score				
1	37 (77.1%)	29 (60.4%)	1 (12.5%)	0 (0%)
2	6 (12.5%)	11 (22.9%)	0 (0%)	0 (0%)
3	2 (4.2%)	5 (10.4%)	2 (25.0%)	2 (25.0%)
4	3 (6.3%)	3 (6.3%)	5 (62.5%)	6 (75.0%)