

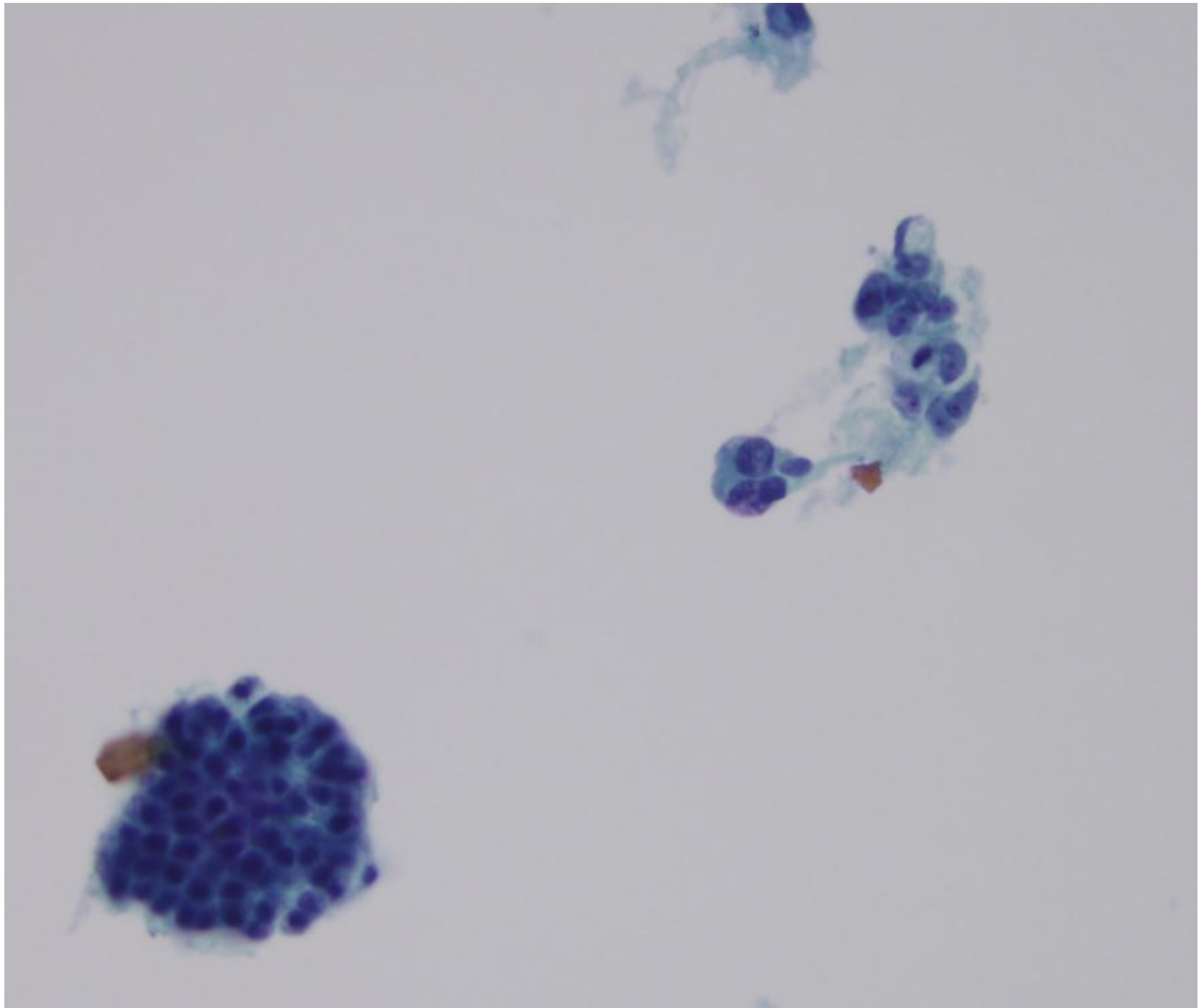
Interesting Case Conference

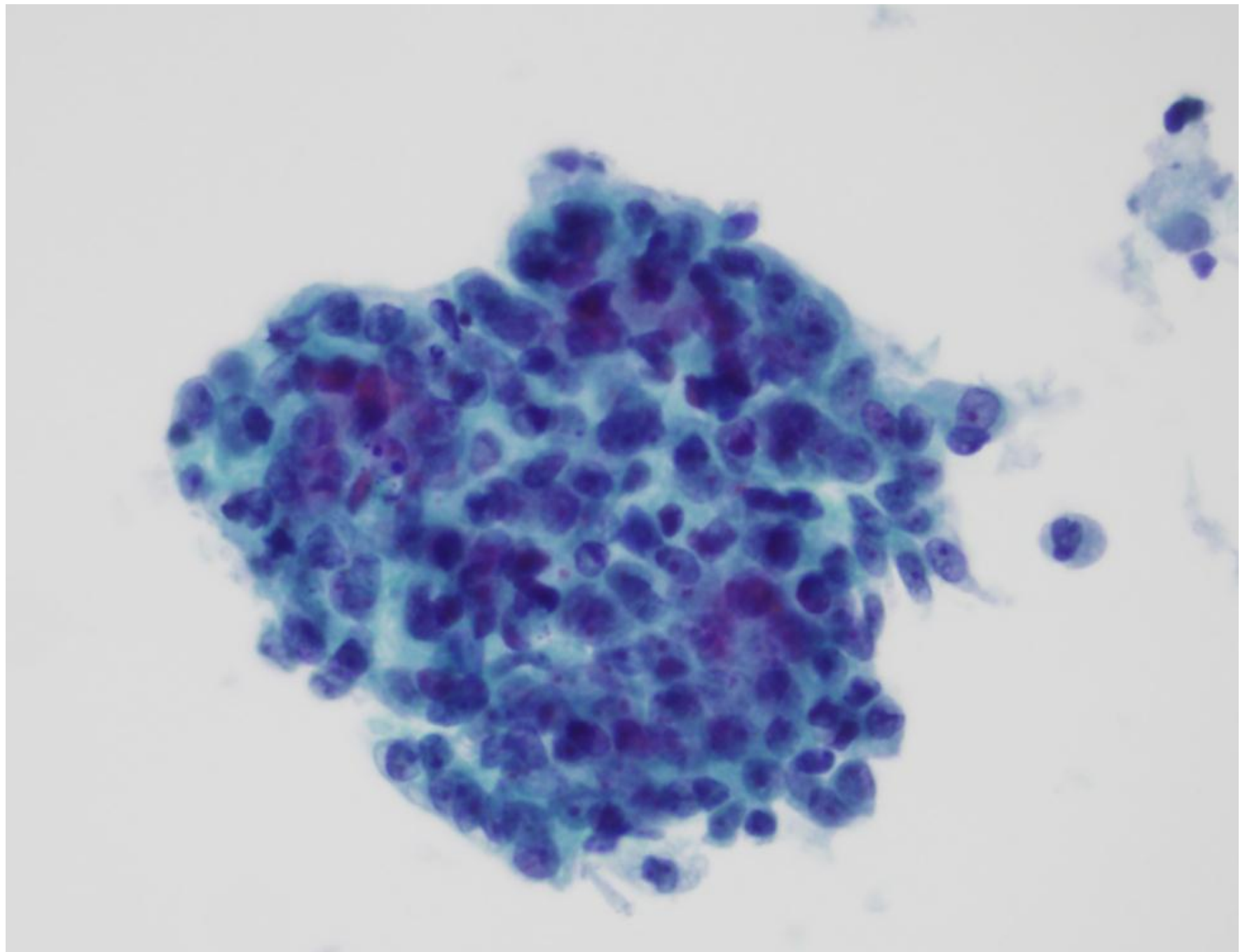
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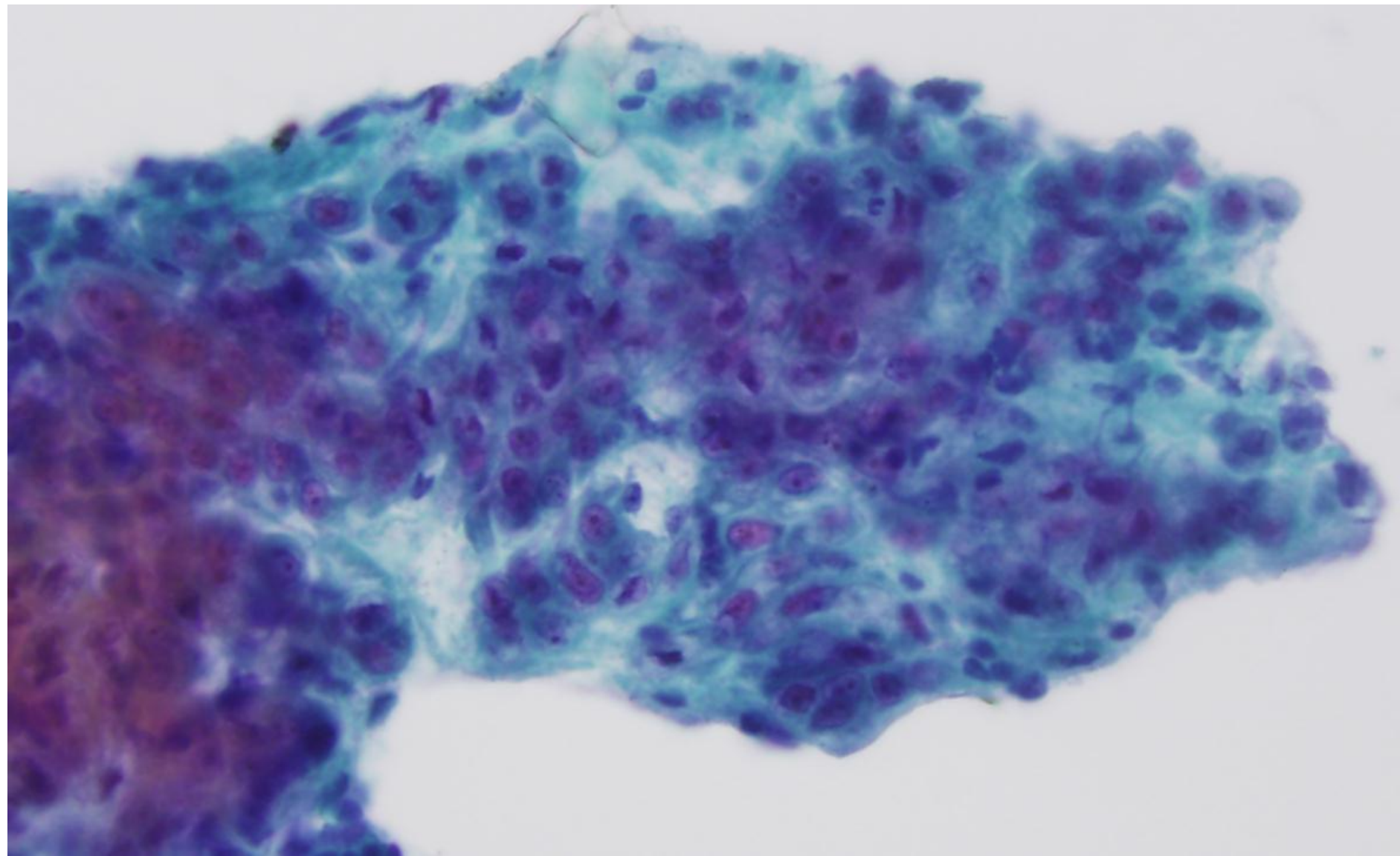
- 51 yo M with bile duct strictures
- August 2013 painless jaundice
- s/p stent
- Possible superimposed primary sclerosing cholangitis
- Prior atypical cytology on bile duct brushings

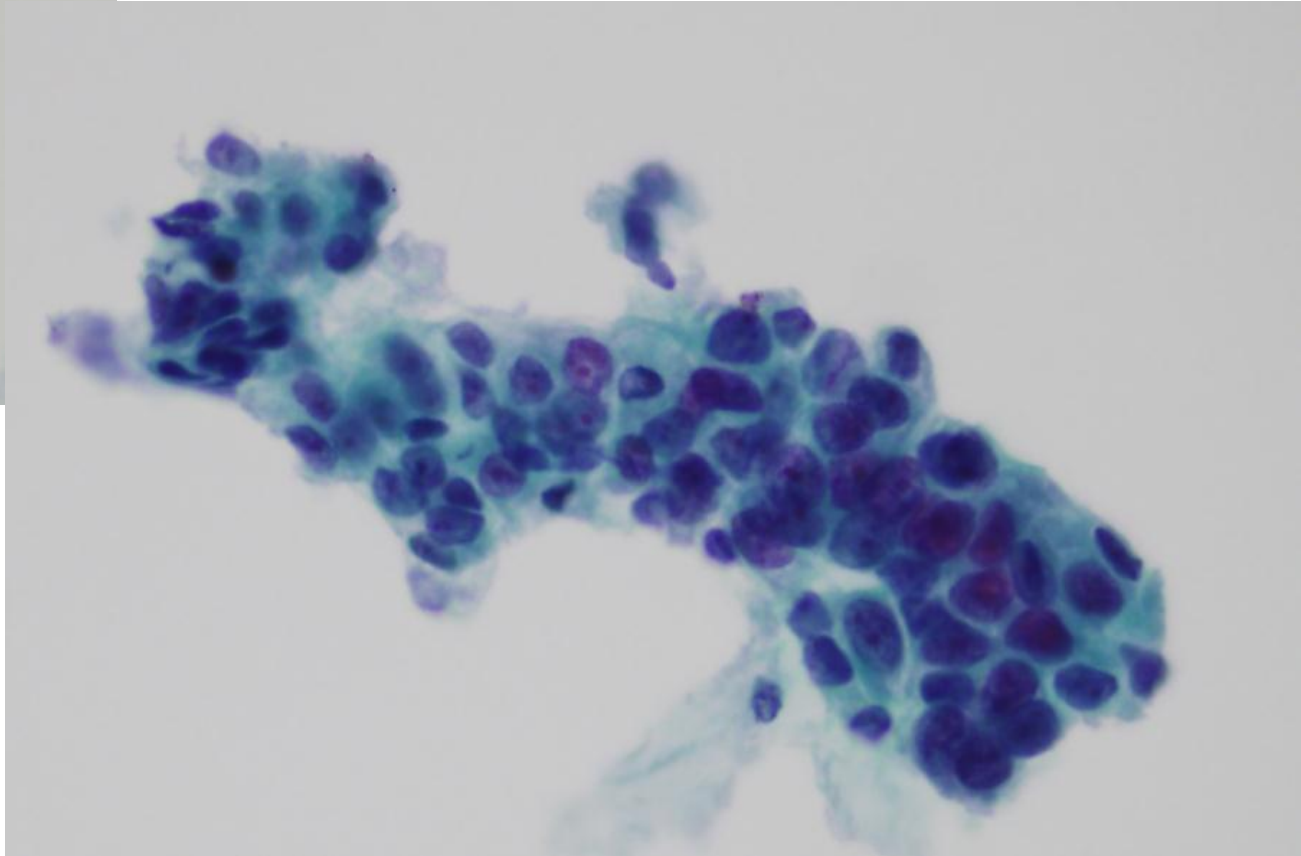
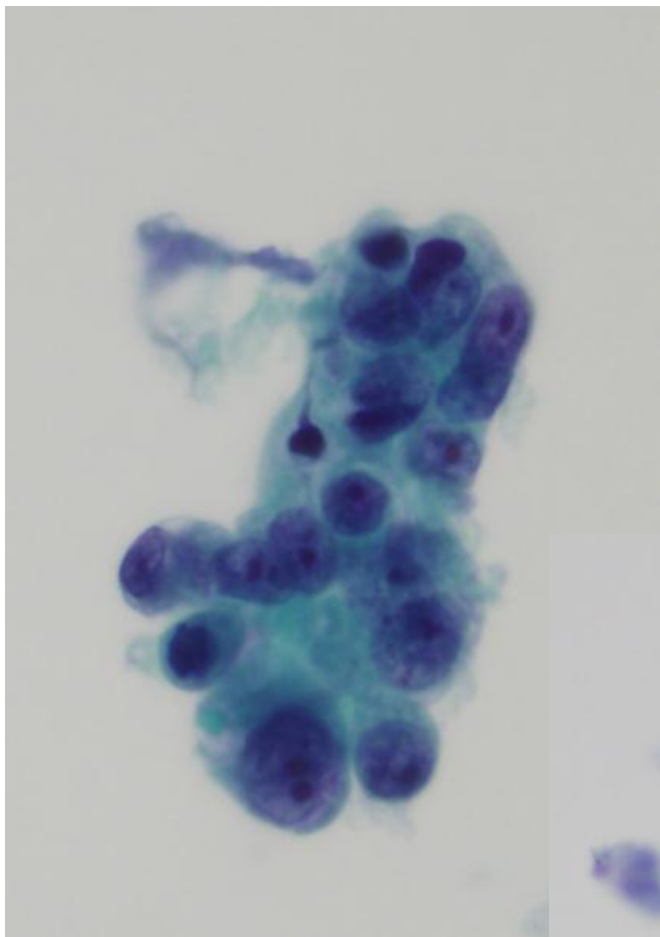
Procedure note

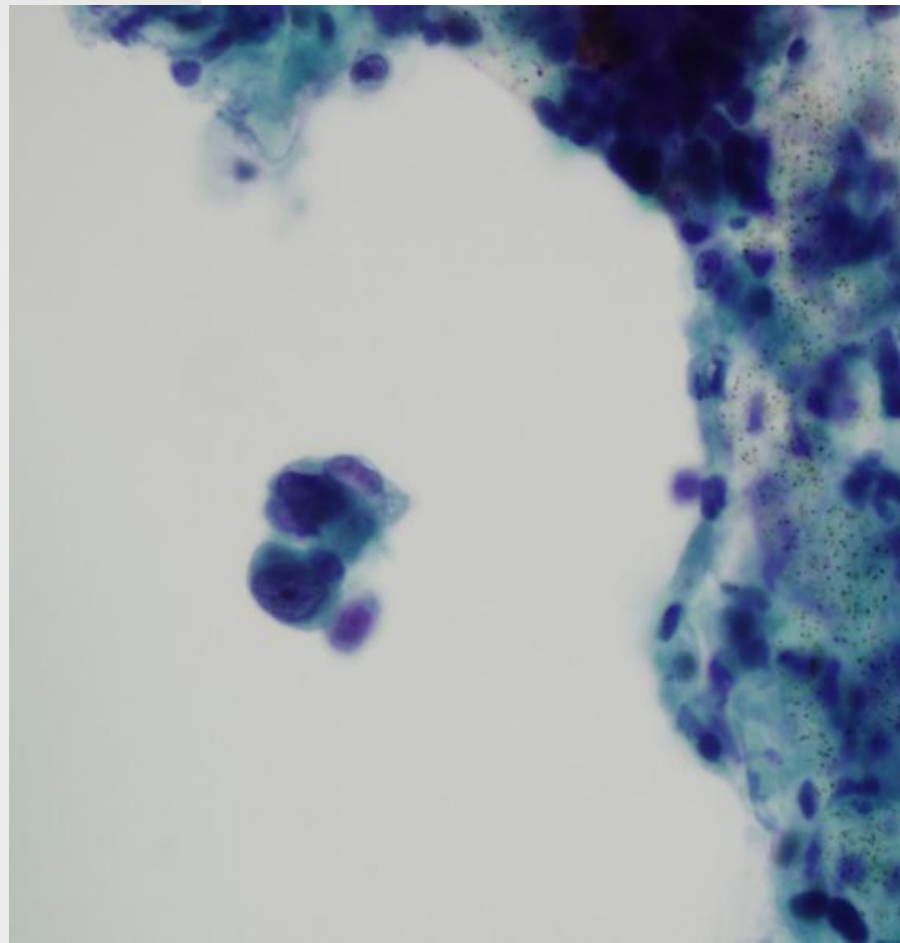
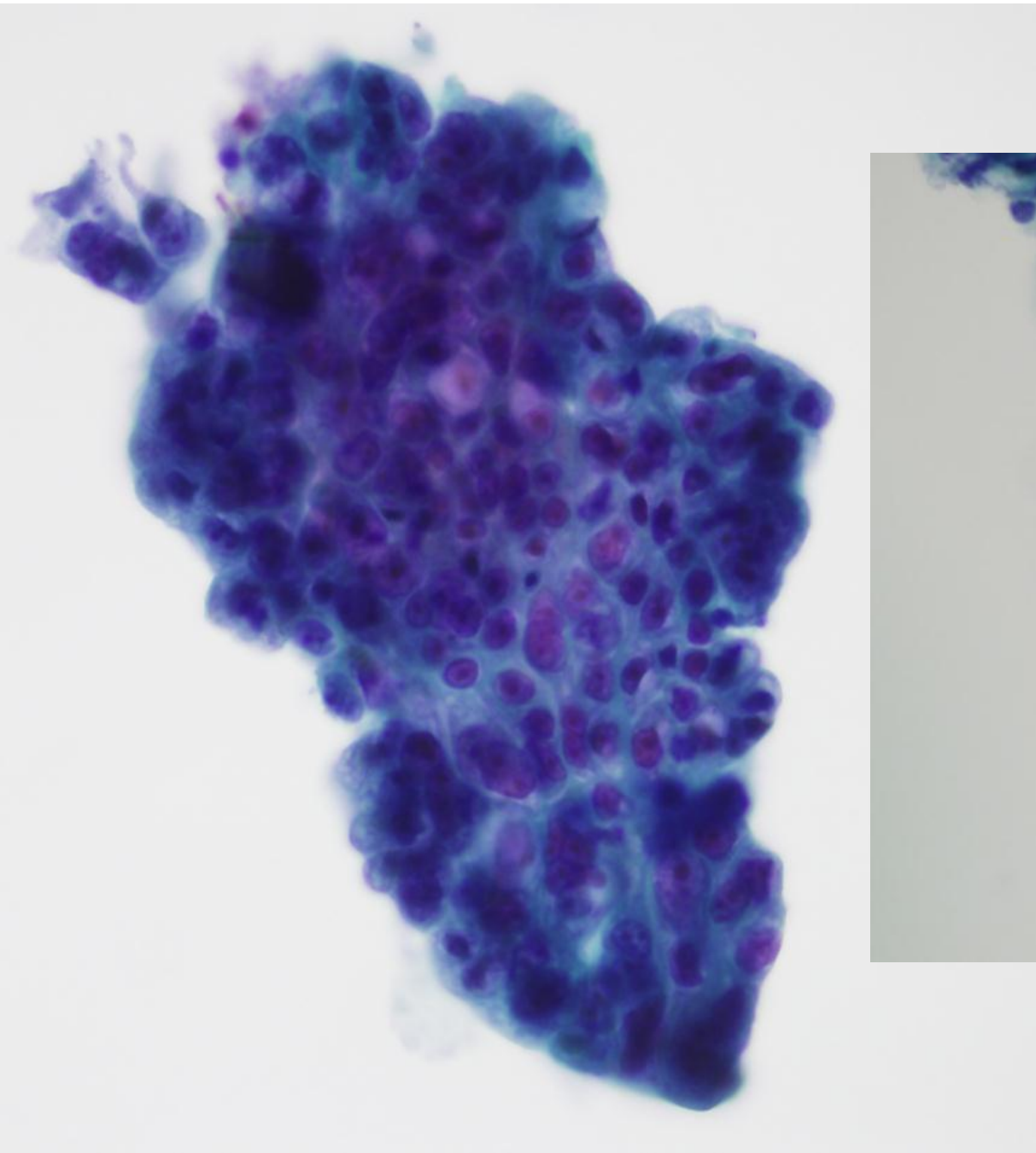
- Common hepatic duct stricture
- No evidence for PSC or PBC
- Biliary tree successfully swept with balloon, clot and blood seen
- Small irregular mass seen with intraductal US (IDUS)
 - Brushing
 - Biopsy











How far would you go?

- Atypical
- Suspicious for adenocarcinoma
- Positive for adenocarcinoma

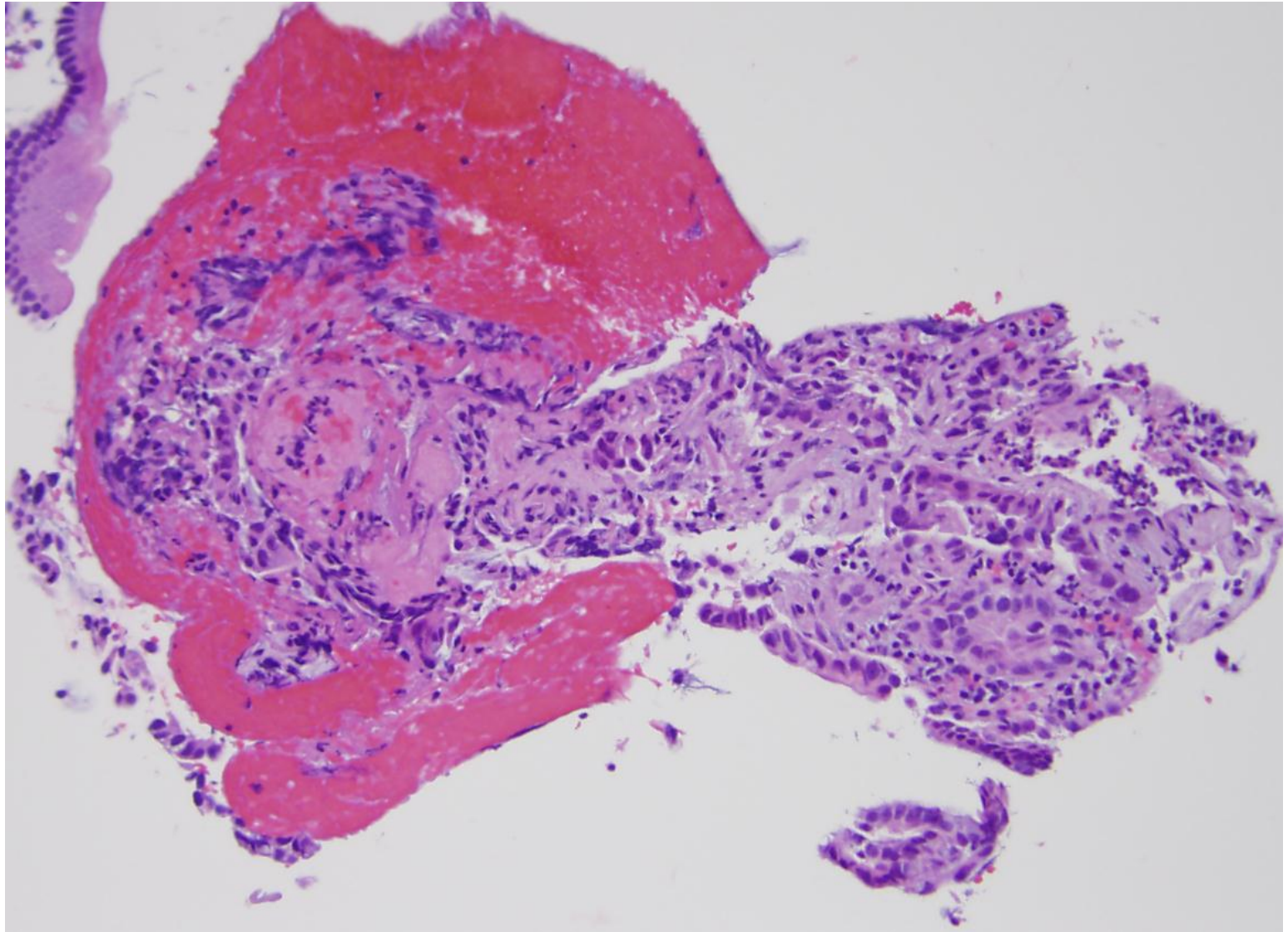
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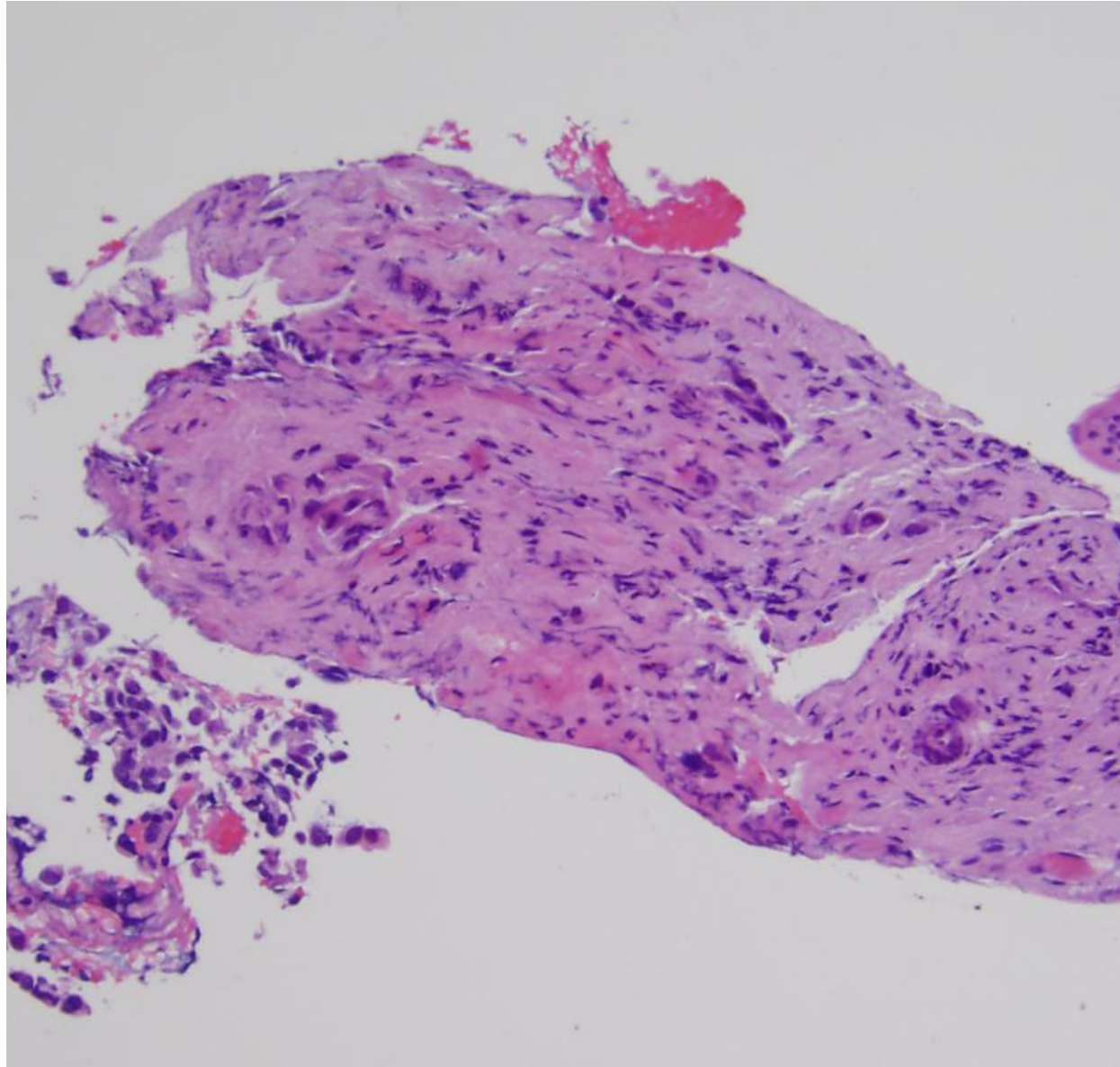
Cytologic Diagnosis

- Positive for adenocarcinoma

Biopsy



Biopsy



Biopsy Diagnosis

- Positive for adenocarcinoma

Bile duct brushings

- *Sensitivity* of between 30 and 60%
- *Specificity* ranging from 87 to 100%.
- Features of malignancy include:
 - chromatin *clumping*, nuclear molding
 - *increased N/C ratio*
 - *loss of honeycomb pattern or polarity*
 - *greater than three- or fourfold variation in nuclear size within the same cluster of cells*
 - *cell-in-cell arrangements*

Table I. Overall Risk of Malignant Outcome With Respect to Cytology Brushing Result

<i>Brushing cytology result</i>	<i>Benign outcome</i>	<i>Malignant outcome</i>	<i>Total</i>	<i>% Malignant</i>	<i>Relative risk</i>	<i>P^a value</i>
Benign	79	26	105	25% (16–33)	1.0	
Atypical favor reactive	8	2	10	20% (0–50)	0.8 (0.2–2.9)	0.74
Atypical, NOS	17	28	45	62% (47–77)	2.5 (1.7–3.8)	<0.001
Atypical suspicious	8	23	31	74% (58–91)	3.0 (2.0–4.4)	<0.001
Malignant	0	25	25	100% (NA)	4.2 (3.0–5.9)	<0.001
Total	112	104	216			

^a*P* values are for the relative risk compared to a brushing result of benign.
NA, not available (unable to calculate).

Table II. Accuracy Data for Differing Definitions of a Positive Cytology Brushing Test

<i>Definition of positive test</i>	<i>Sensitivity</i>	<i>Specificity</i>	<i>PPV</i>	<i>NPV</i>	<i>Accuracy</i>
Atypical NOS, atypical suspicious, malignant	73.1% (64.4–81.7)	77.7% (69.8–85.5)	75.2% (66.7–83.8)	75.7% (67.7–83.6)	75.5% (69.7–81.2)
Suspicious, malignant	46.2% (36.4–55.9)	92.9% (88.0–97.7)	85.7% (76.3–95.1)	65.0% (57.7–72.5)	70.4% (64.2–76.5)
Malignant	26.3 (15.7–32.4)	100.0% (NA)	100.0% (NA)	58.6 (51.6–65.7)	63.4 (57.0–69.9)