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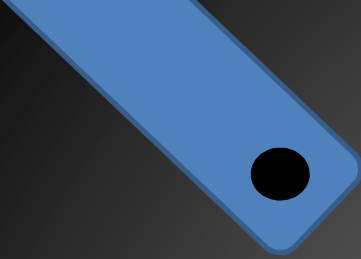
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# Iatrogenic Retinal Breaks Induced by Separation of Posterior Hyaloid Face during 23-Gauge Pars Plana Vitrectomy

Murray CD, Rahman R, Stephenson J

Three red decorative elements at the bottom of the slide, resembling stylized flames or teardrops. One is on the left, and two are on the right.

# Purpose

- Describe incidence and features of intraoperative retinal breaks caused by iatrogenic separation of the posterior hyaloid face (PHF) during 23-G Pars Plana Vitrectomy (PPV) surgery for:

Macula hole (MH)

Vitreomacula traction (VMT)

Epiretinal membrane (ERM)

Floater

# Methods

- Prospective, consecutive, single surgeon, observational case series
- 23-Gauge TSV day case surgeries
- Calderdale Royal Hospital, UK
- 2009-2011
- Approved by local ethics committee

# Methods

- Collected baseline demographics, indication for surgery and axial length
- Pre-operative dilated fundoscopy
- Inclusion criteria:  
PPV for MH, VMT, ERM and floaters +  
Attached posterior hyaloid face (PHF)

# Definitions

Iatrogenic Posterior hyaloid face (PHF) separations:

- Suction induced or
- Adherent- requiring membrane blue with suction

# Outcome measures

- Retinal break or tear *versus* No retinal break or tear
- Retinal haemorrhage - grouped with those categorised as not experiencing retinal break or tear
- Only 'U' shaped tears included and pre-existing breaks excluded
- Pre-existing breaks = round or substantial surrounding pigment

## ...Methods

- ALL Intra-operative findings recorded by surgeon immediately after surgery
- **Forced entry and parsimonious multiple logistic regression analyses** were conducted, using statistical software, to test for significance of association of the set of recorded factors and covariates with the dichotomised outcome measure.



# Results

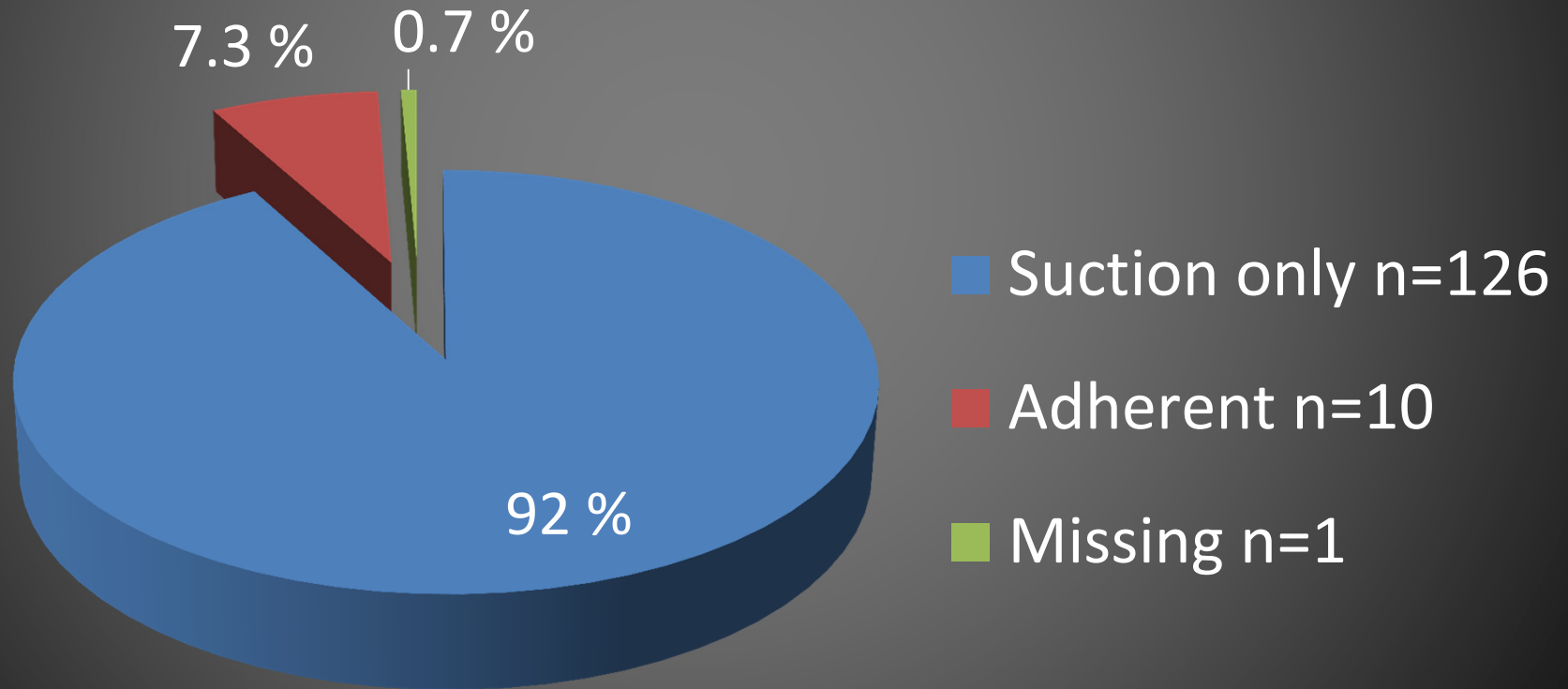
- $n = 137$
- Age range: 32-94 years
- Mean age in years = 69.6 (SD 11.9)
- Mean axial length in mm = 23.7 (SD 1.41)

# Results

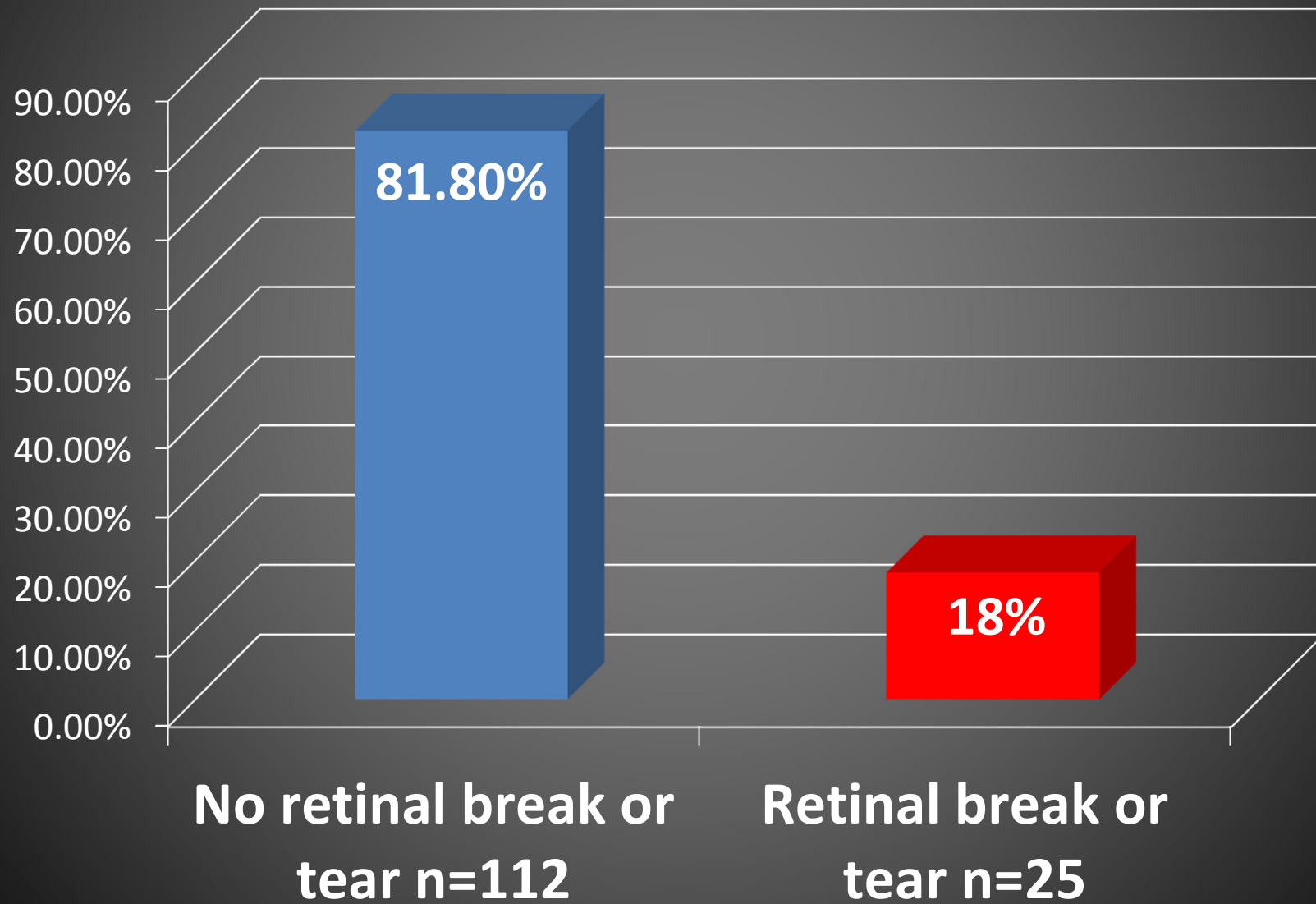
- Pre operative diagnosis frequency (%)
  - MH n = 71 (51.8)
  - VMT n = 12 (8.8)
  - ERM n = 27 (19.7)
  - Floaters n = 27 (19.7)

# Results

- Posterior hyaloid separations:



# Results



# Results

- Breakdown of pathologies for patients with iatrogenic retinal breaks or tears (n=25)

MH n=13 (52%)

VMT n=2 (8%)

ERM n=3 (12%)

Floater n=7 (28%)

# Results

Forced entry and parsimonious multiple logistic regression models:

- Odds of retinal break or tear reduce by about 3-4% for each increasing year of age

Forced entry:

- some substantive association with odds of retinal break or tear for adherent cases being around 3.7 times those for suction-only cases

# Conclusions

- Mechanical detachment of PHF - important risk factor in formation of retinal breaks
- If undetected, the risk of Rhegmatogenous Retinal Detachment in post-operative period increases significantly
- This case series reports an 18.2% incidence of iatrogenic breaks associated with PHF separation during 23-G PPV



# Conclusions

- Odds of retinal breaks reduce by 3-4% for each increasing year of age
  - Adherent PHF cases are at 3.7 increased odds of iatrogenic breaks compared to suction-only cases
  - Particular care intraoperatively in these cases to search for iatrogenic breaks
- 