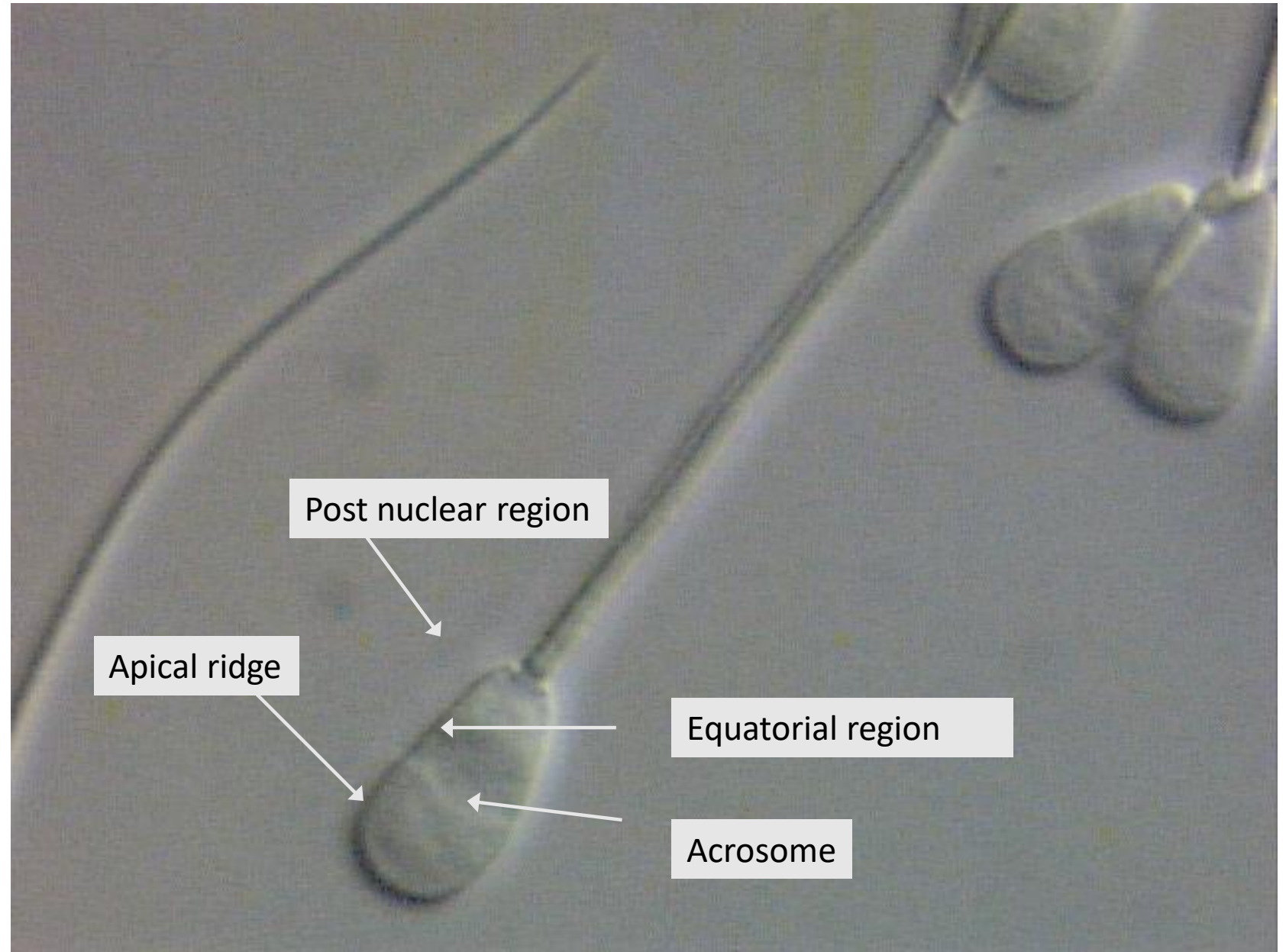


Knobbed acrosomes in bull semen

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Normal Bull Sperm
DIC 1000X



Knobbed acrosomes in bull semen may occur in several different ways.

1. Secondary to a spermatogenic stressor – e.g. heat. re they normally appear in numbers at approximately 3 weeks post insult, in association with numbers of other typical sperm defects following such stress.

2. As a genetic fault. These are uncommon and so far have been identified in certain lines of Friesian, Angus and Wagyu bulls.

Some rules for categorising these are shown below.

KA Criteria

To qualify as a “problem”:

- In 20% plus of sperm population
- Consistent over time
- Lack of other indications of major spermatogenic dysfunction
- Infertility? Generally suspected if not apparent.

Bull NE 1000X

Most commonly picked up first as a flattened, thickened top edge of the acrosome (erroneously termed a flat acrosome)



Bull NE 1000X

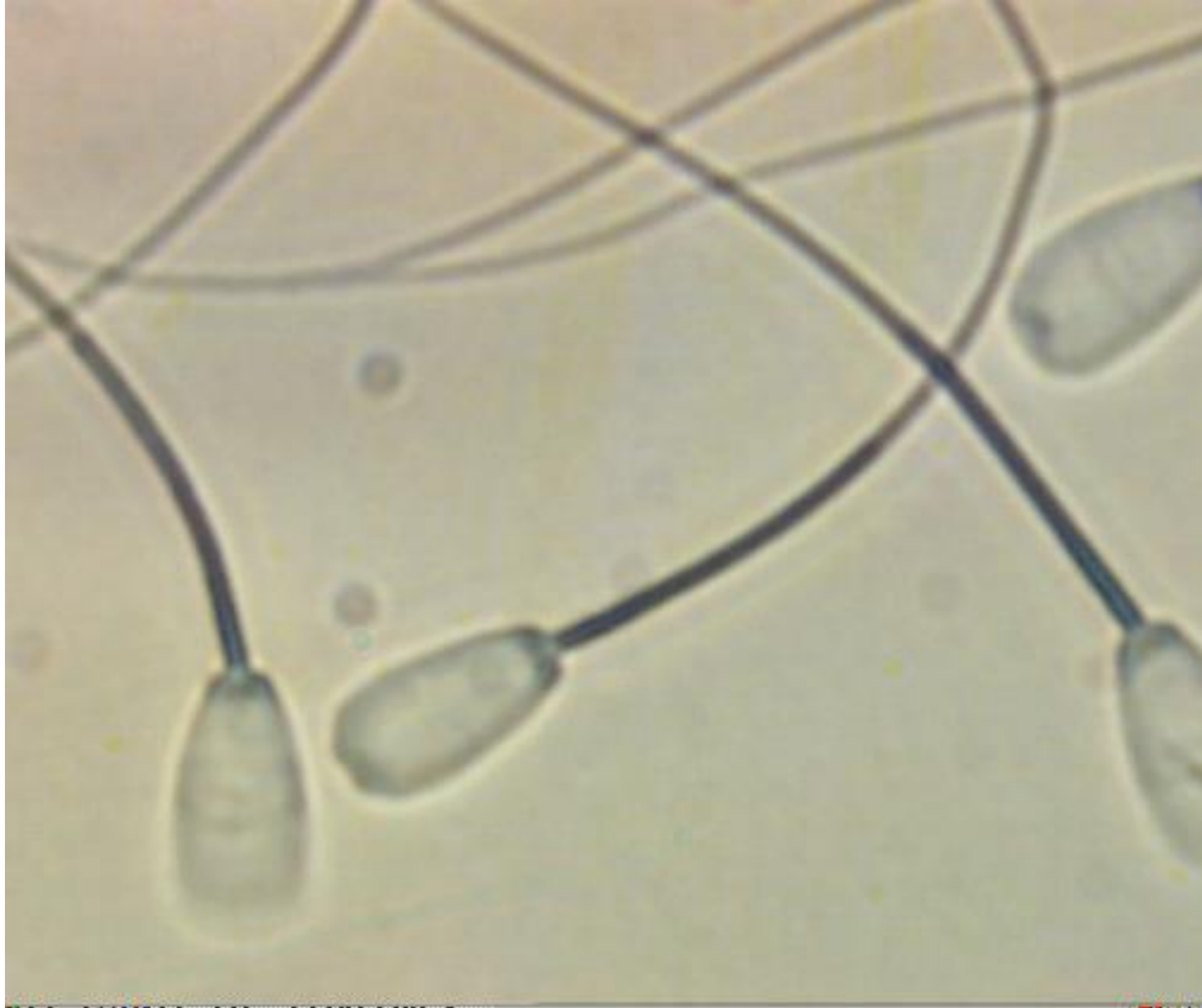


Folded, version – quite common

Bull Phase 1000X



Bull Phase 1000X



Bull DIC 1000X

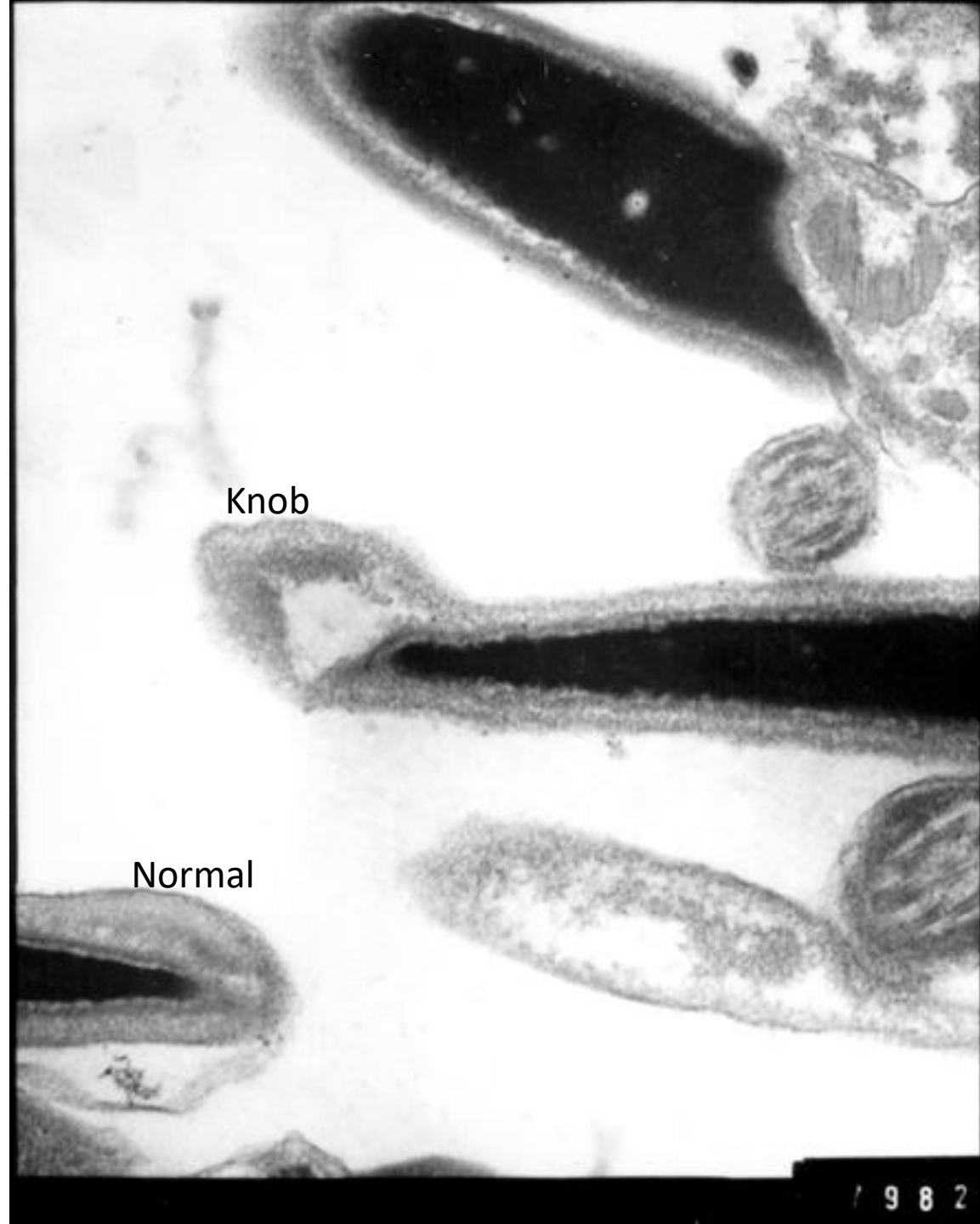
Knob form, from which the name derives



Transmission Electron Micrograph
Showing normal apical ridges.
Note, all solid appearance.



Transmission EM of both knobbed and normal apical ridges



TEM classic knob – note cyst-like space containing loose material

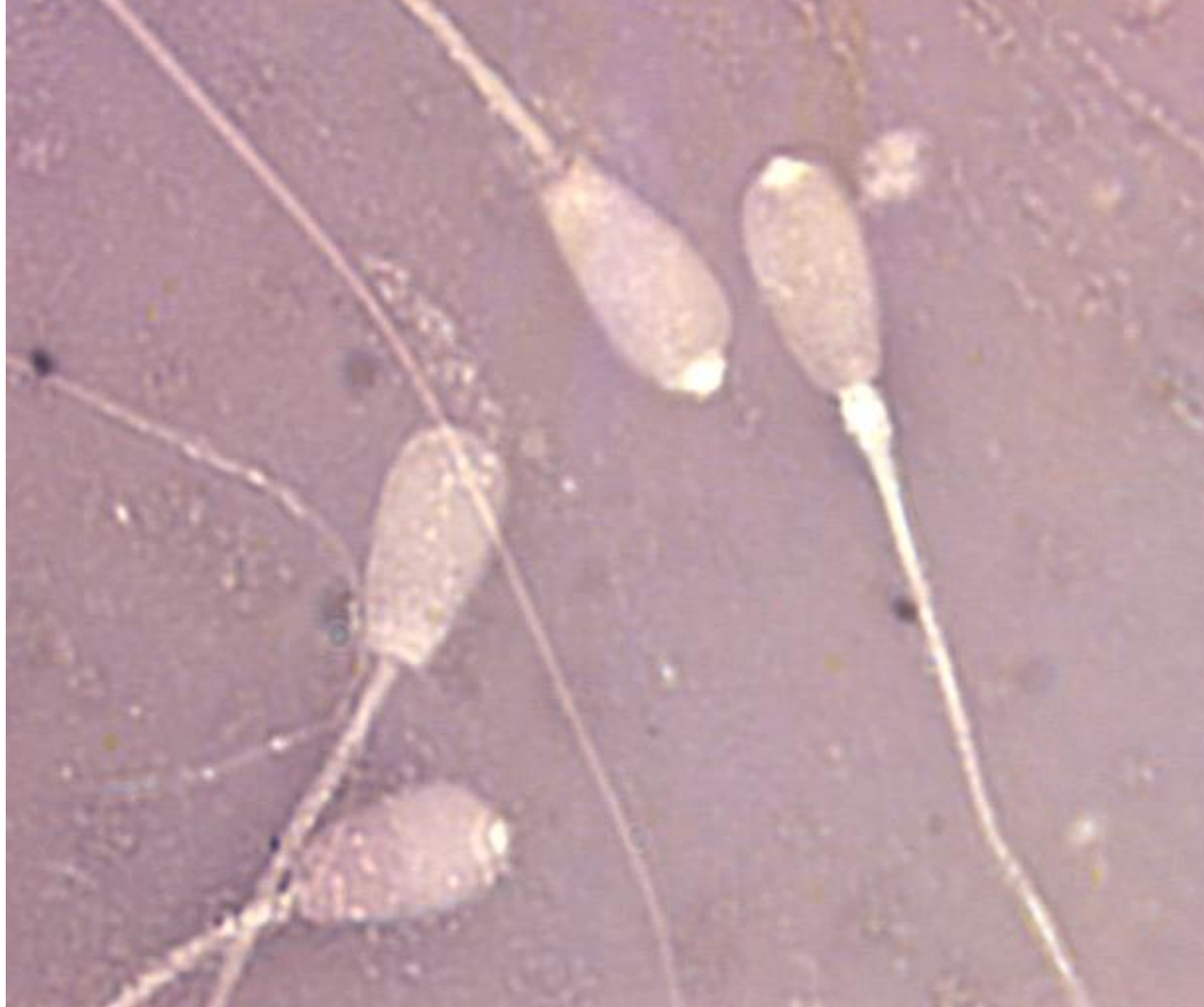




Phase 1000x
Classic knob (which
is relatively less common
than other forms.



NE 1000X
Classic knobs





DIC 1000x
Folded knob, plus
PNC loss and midpiece defect



Modified phase 1000X
Classic folded, thickened
Knob.

