Supplementary Table (S1)- Common current markers of proliferation (advantages and Limitations).

	Marker	***Advantages***	***Limitations***
Immunohistochemistry	***Ki67***	Prognostically significant in invasive BC.	Field selection and stain intensities disagreement. Suboptimal reproducibility. Assesses all cells entering the cell cycle not only mitoses.
	PHH3	High specificity to mitotic cells	Clinical utility is still under investigation.
	Ki-S1	Identifies a cell cycle associated antigen.	No prognostic results.
	Topoisomerase IIa	Marker of cells ongoing division and similar to Ki67.	Similar to Ki67
	Cycline A	Expressed in the late cell cycle phases S, G2, and M. Has prognostic importance in BC.	Similar to Ki67
	Nuclear antigen proliferating cells (PCNA)	Targets the S phase of the cell cycle.	No prognostic results.
	Geminin	Correlated with cell proliferation.	No prognostic results.
	Minichromosomemaintenance (McM)	Involved in the control of DNA replication	No prognostic results.
Stains	***Crystal violet, Toluidine blue, Giemsa stain and fluorescent microscopy.***	Image chromosome division figures (CDFs), and atypical and normal mitotic figures.	
Flow cytometry	***Cytometric phase S fraction***	Prognostically significant.	Use fresh / frozen material
Cell cycle time	***Argyrophilic nuclear organiser regions in Ki67 positive cells***	Prognostically significant	Difficult to evaluate
Incorporation techniques	***Thymidine labelling index***	Prognostically significant.	Prognostic significance similar to Ki67 and MAI.
	Bromodeoxyuridine (BrdU) and tritiated thymidine labelling index	Prognostically significant.	Use fresh material, Intravenous treatment and/or includes radioactivity

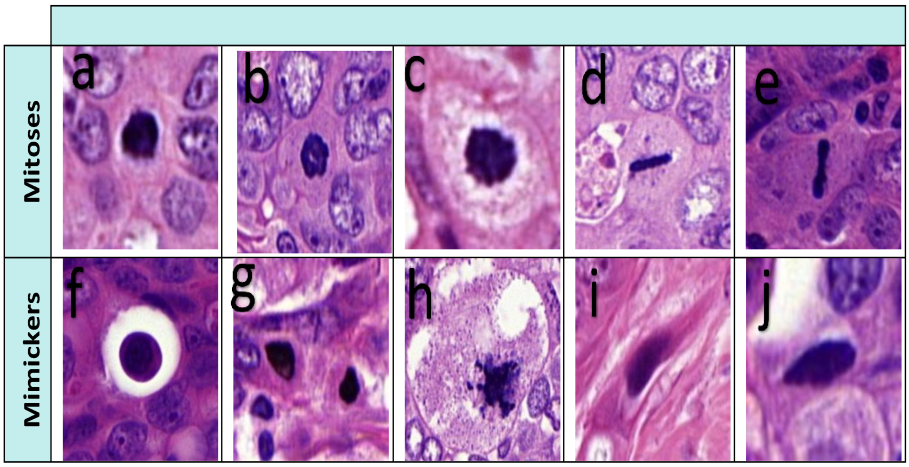
Supplementary Table (S2)- Morphological features of mitoses.

	Nucleus						***Cytoplasm***		
Phases of mitosis	***Nuclear membrane***	***Hairy projections***	***Shape***	***Colour***	***Size***	***Chromatin homogeneity***	***Cytoplasm present or not seen***	***Cytoplasmic colour***	***Cell membrane***
Prophase	Intact nuclear membrane	Absent	Round to oval Absent nucleolus	Intensely basophilic	No increase	Chromatin condenses into chromosomes that are coarse clumps of similar size	Present	Abundant granular slightly eosinophilic or basophilic cytoplasm	Intact cell membrane
Prometaphase	Absent	Present	Round to oval Absent nucleolus	Intensely basophilic	No increase	Condensed chromatin	Present	Abundant granular slightly eosinophilic or basophilic cytoplasm	Intact cell membrane
Metaphase	Absent	Present	The metaphase plate may be: - linear and perpendicular to the long axis of the spindle apparatus - parallel to the axis with chromosomes in a ring or round layer - ''ring metaphase'' forms can be seen Absent nucleolus	Intensely basophilic	No increase	Condensed chromatin	Present	Abundant granular slightly eosinophilic or basophilic cytoplasm	Intact cell membrane
Anaphase	Absent	Present	2 uniform groups of dark chromatins are being pulled away from each other Absent nucleolus	Intensely basophilic	No increase	Condensed chromatin	Present	Abundant granular slightly eosinophilic or basophilic cytoplasm	Intact cell membrane
Telophase	Absent	Present	Nuclear envelope forms around 2 uniformly sized separate clusters of chromosomes Nucleolus reforms	Intensely basophilic	No increase	Chromatin de-condensation	Present	Abundant granular slightly eosinophilic or basophilic cytoplasm	Cell membrane separates the 2 new cells

Supplementary Table (S3) - Comparison between mitotic and apoptotic figures in routinely stained haematoxylin and eosin slides.

Criteria	***Mitosis***	***Apoptosis***
Cell size	A slight increase in size.	Reduced cell size.
Chromatin	Condensed chromatin	Pyknosis (small condensed nuclei) – karyorrhexis (nuclear fragmentation) – karyolysis (dissolved nuclear material) and formation of apoptotic bodies
Nuclear membrane	Absent nuclear membrane Hairy projections of the nuclear material.	Intact nuclear membrane. No hairy projection of nuclear material.
Cytoplasm	Abundant, slightly eosinophilic granular cytoplasm.	Densely eosinophilic cytoplasm
Cell membrane	Intact; separates only during telophase resulting into two daughter cells	Intact; altered structure. Loss of cell to cell contact; blebbing, cytoplasmic buds, and formation of apoptotic bodies at late stages.

Supplementary Figure (S4)-Photomicrograph showing different mitotic figures and mimickers (H&E) using WSIs at 40x magnification.



- **(a-e):** Mitotic Figures (H&E) showing mitotic figures in prophase and metaphase.
- **(f-j):** Mimickers (H&E).
- **(f):** Apoptotic figure, **(g)** Pigments, **(h)** Karyolitic cell, **(i)** Compressed elongated hyperchromatic cells, **(j)** Hyperchromatic cell.