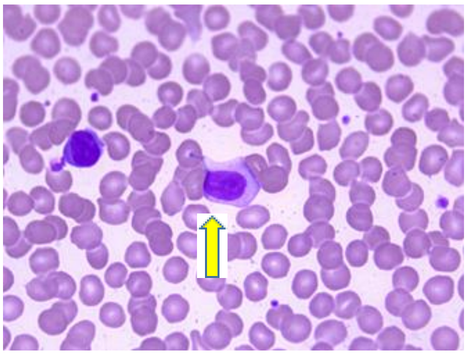
Department of Haematology

An 11-year-old girl student presented with complaints of fever, sore throat for 1 week. Physical examination revealed multiple freely mobile, non-tender cervical lymph nodes palpable liver.

Complete Blood Count (CBC) is as follows:
Hb-12.1g/dl, TLC- 3800 /cumm, DC- P-30%, L-65%, E-02%, M-03%
RBC- 4.2 million /cumm.Platelet count-4.40 lakhs /cumm HCT-34%
MCV- 81fl MCHC- 32 g/dl, MCH-17.2pg, RDW-13.8%



What are the cells indicated by the arrows in the above peripheral smear images?

Answer: Downey cell

Downey cells are reactive lymphocytes/ atypical lymphocytes which are a hallmark of Infectious Mononucleosis (IM), first described by Hal Downey in 1923. They represent cytotoxic (CD8+) lymphocytes that become large as a result of antigen stimulation. The classic and most common type of Downey cell has abundant agranular bluish cytoplasm displaying characteristic moulding and scalloping around the RBCs (shown in image).

What are the clinical features and further investigations required for the diagnosis of this case?

The diagnosis of IM is based on clinical examination, featuring the classic triad of fever, lymphadenopathy, and pharyngitis, along with laboratory findings such as reactive/ atypical lymphocytosis with Downey cell morphology as described above, heterophile antibodies (Paul Bunnell test), and EBV-specific antibodies.