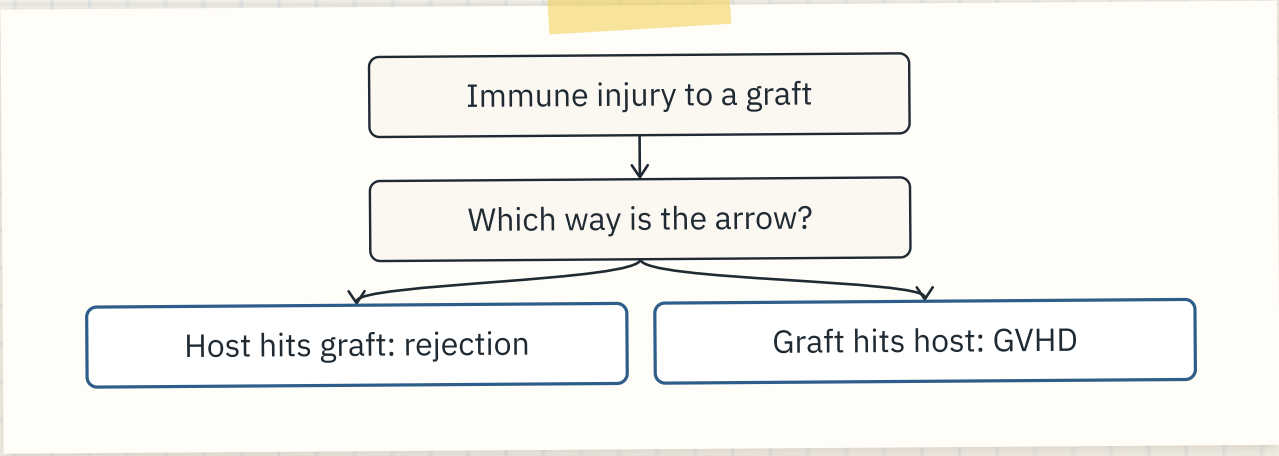
Rejection vs GVHD

Timing and mechanism of graft failure



Step by step

1. Ask which way the arrow points: host against graft, or graft against host.
2. If host against graft, use timing: minutes, months, years.
3. Confirm with the biopsy pattern.

Type	Timing	Mechanism
Hyperacute	Minutes to hours	Preformed antibody, complement, vessels clot
Acute	Days to months (mostly year 1)	Mostly T cells (direct); or antibody, C4d
Chronic	Months to years	Fibrosis, vasculopathy (indirect)
Acute GVHD	Classically < 100 days	Donor T cells: skin, gut, liver
Chronic GVHD	Classically > 100 days	Skin fibrosis, sicca, cholestasis

Rejection types and GVHD

Direction of attack

Rejection: host attacks graft

GVHD: donor T cells attack host

Exam traps

- Hyperacute rejection cannot be treated, only prevented by ABO match and crossmatch.
- Direct pathway drives acute rejection; indirect pathway drives chronic rejection.
- Rash, diarrhoea and jaundice after a stem cell graft point to GVHD, not rejection.

Transplant rejection explained: hyperacute, acute, chronic and GVHD

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/immunology/transplant-rejection-hyperacute-acute-chronic-gvhd

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