gutflix
GI learning, personalised

Summary

A SPATIALLY ORGANIZED IMMUNE-STROMAL PROGRAM DRIVES THE FISSURE-TO-FISTULA CONTINUUM IN CROHN'S DISEASE

Federica Ungaro

UEG Week Barcelona 2026 | Presentation

Mechanisms & Personalised Medicine | Immunology | IBD

October 20, 2026

Spatial transcriptomics of Crohn's disease surgical specimens reveals that fissures are active immune-stromal niches with inflammatory fibroblasts and monocytes that drive fistula formation through a progressive shift from CXCL12-CXCR4 chemokine recruitment to complement and integrin-mediated adhesion pathways.

KEY POINTS

- Fissure-associated regions were enriched in inflammatory fibroblasts and inflammatory monocytes, identifying fissures as active immune-stromal niches rather than passive structural defects
- Stromal cells and myofibroblasts transitioned into inflammatory fibroblasts while inflammatory monocytes differentiated into macrophages and LAMP3^{+} dendritic cells in coordinated differentiation programs
- Ligand-receptor analysis demonstrated a progressive shift from early CXCL12-CXCR4 chemokine signaling to adhesion-mediated circuits involving Complement, ADGRE5-CD55, and THY1-integrin pathways, establishing a self-sustaining immune-stromal microenvironment in advanced fissures and fistulas
- Early fissures represent a potential therapeutic window, with CXCR4, Complement, and immune-stromal adhesion pathways identified as candidate targets to prevent fistula development
- The transition from chemokine-driven recruitment to adhesion-mediated immune retention defines a key mechanistic step in fistulization in Crohn's disease

VIEW THIS CONTENT ON GUTFLIX

https://gutflix.eu/search/d/b08bfe92-d12c-11f1-8d4c-daaa6dbee0a2

AI-generated summary

This summary was generated by an AI large language model based on the content transcript. It is for informational purposes only and should not be considered a substitute for clinical judgment. Always rely on your professional expertise and the full clinical context when making clinical decisions.