À propos d'un cas de diarrhée congénitale

Apport de la Cytologie du Liquide Amniotique

SoFFœt
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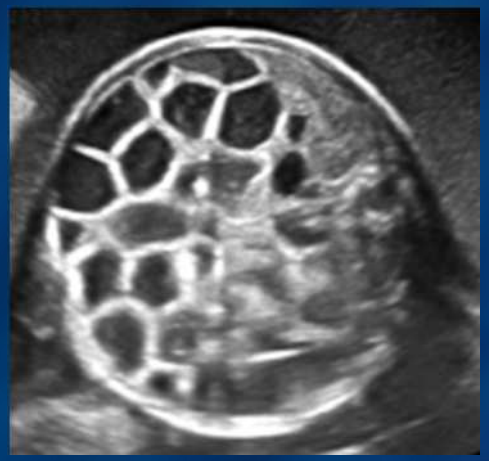
SoFFœt 3 décembre 2021

Renseignements cliniques

- Couple apparenté
- Fœtus ♂
- Hydramnios + dilatation digestive :
  - diarrhée congénitale ?
  - atrésies digestives multiples ?

- **PLA à 29 SA + 3 J**

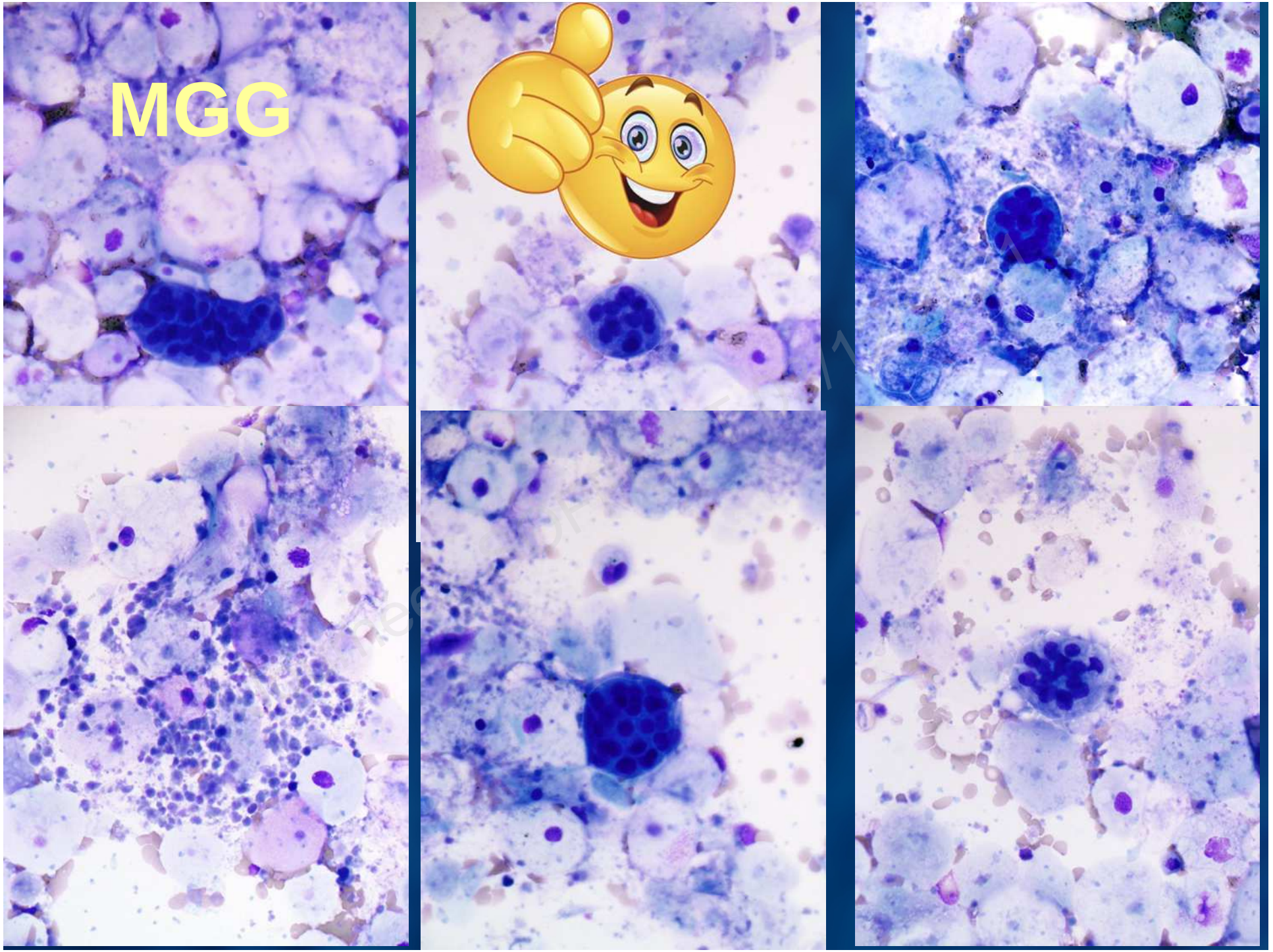


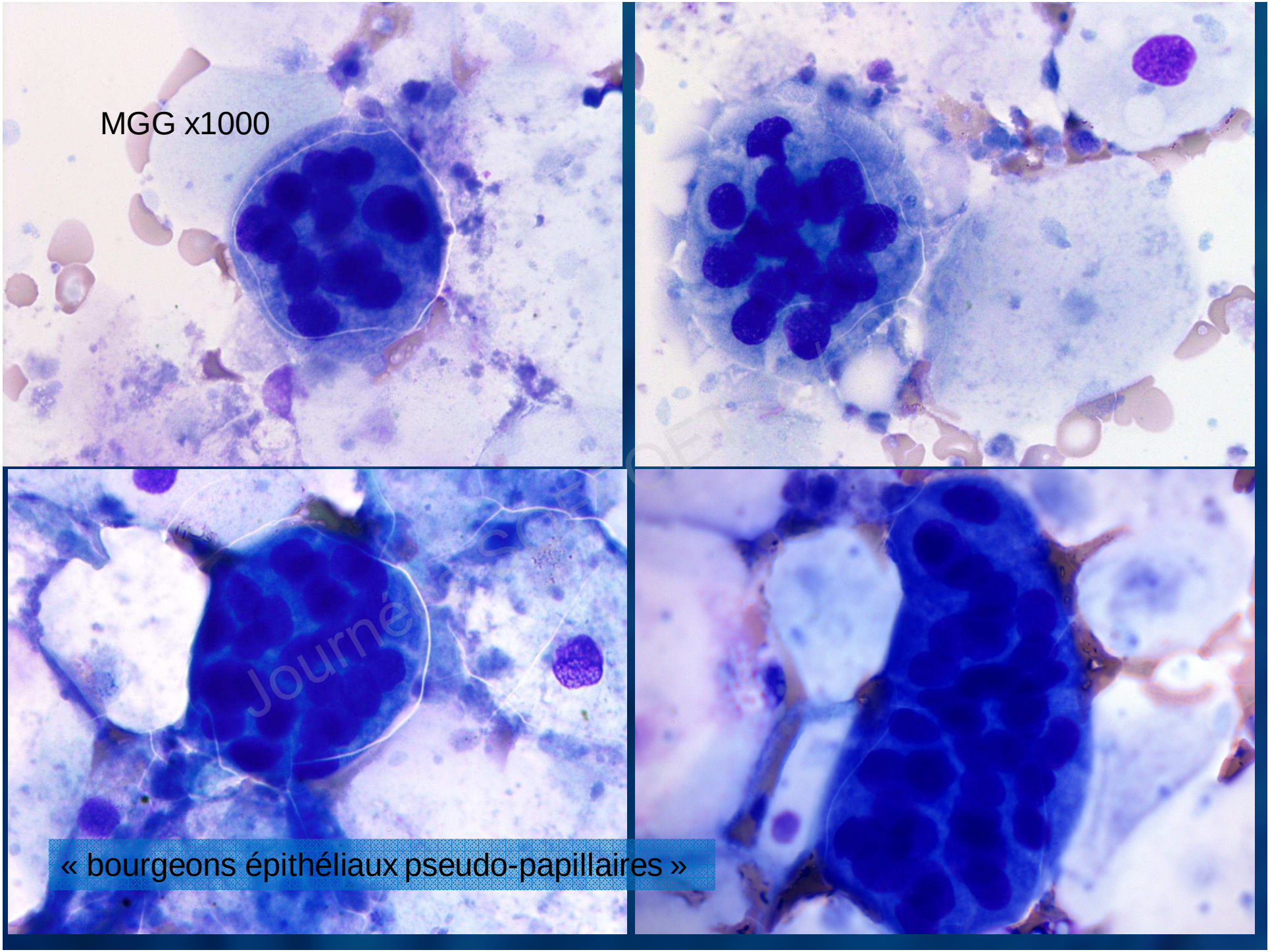
« Honeycomb fetal abdomen »

- « Recherche de villosités dans le LA »

Macroscopie

- 0,25 ml : liquide jaune trouble.


MGG


MGG x1000
« bourgeons épithéliaux pseudo-papillaires »

Search: 'diarrhea congenital '
Results: 4,285 entries.

OMIM

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1: # 270420. DIARRHEA 3, SECRETORY SODIUM, CONGENITAL, WITH OR WITHOUT OTHER CONGENITAL ANOMALIES; DIAR3
Cytogenetic location: 19q13.2
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

2: # 214700. DIARRHEA 1, SECRETORY CHLORIDE, CONGENITAL; DIAR1
Cytogenetic location: 7q22.3-q31.1
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

3: # 616868. DIARRHEA 8, SECRETORY SODIUM, CONGENITAL; DIAR8
Cytogenetic location: 5p15.33
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

4: # 618662. DIARRHEA 11, MALABSORPTIVE, CONGENITAL; DIAR11
Cytogenetic location: 16p13.3
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

5: # 251850. DIARRHEA 2, WITH MICROVILLUS ATROPHY; DIAR2
Cytogenetic location: 18q21.1
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

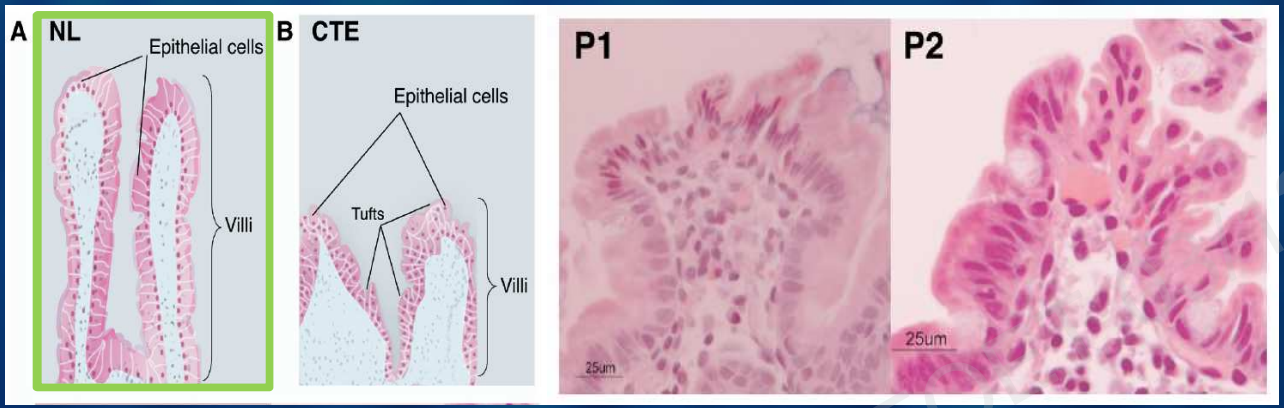
6: # 613217. DIARRHEA 5, WITH TUFTING ENTEROPATHY, CONGENITAL; DIAR5
Cytogenetic location: 2p21
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

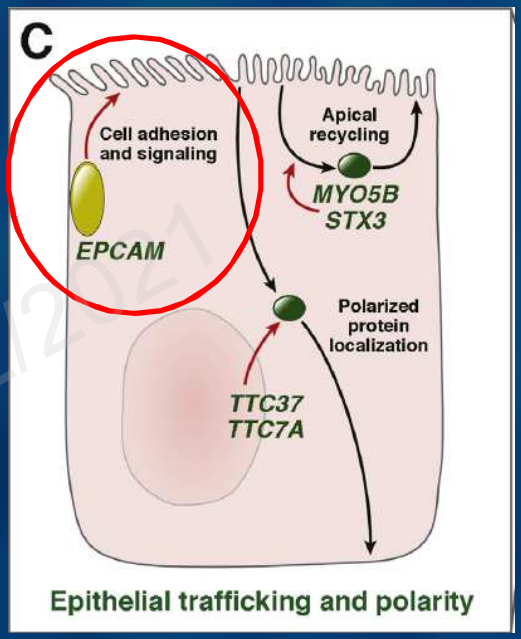
7: # 304790. IMMUNODYSREGULATION, POLYENDOCRINOPATHY, AND ENTEROPATHY, X-LINKED; IPEX
ISLETS OF LANGERHANS, ABSENCE OF, INCLUDED
Cytogenetic location: Xp11.23
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ ICD+ ▶ Links

10: # 610370. DIARRHEA 4, MALABSORPTIVE, CONGENITAL; DIAR4
Cytogenetic location: 10q22.1
Matching terms: (diarrhea | diarrhoea), congenital
▶ Phenotype-Gene Relationships ▶ Phenotypic Series ▶ ICD+ ▶ Links

Dysplasie épithéliale intestinale/ congenital Tufting enteropathy entéropathie congénitale en touffes

EPCAM gene (2p21) = epithelial cellular adhesion molecule
SPINT2 gene (19q13.2)



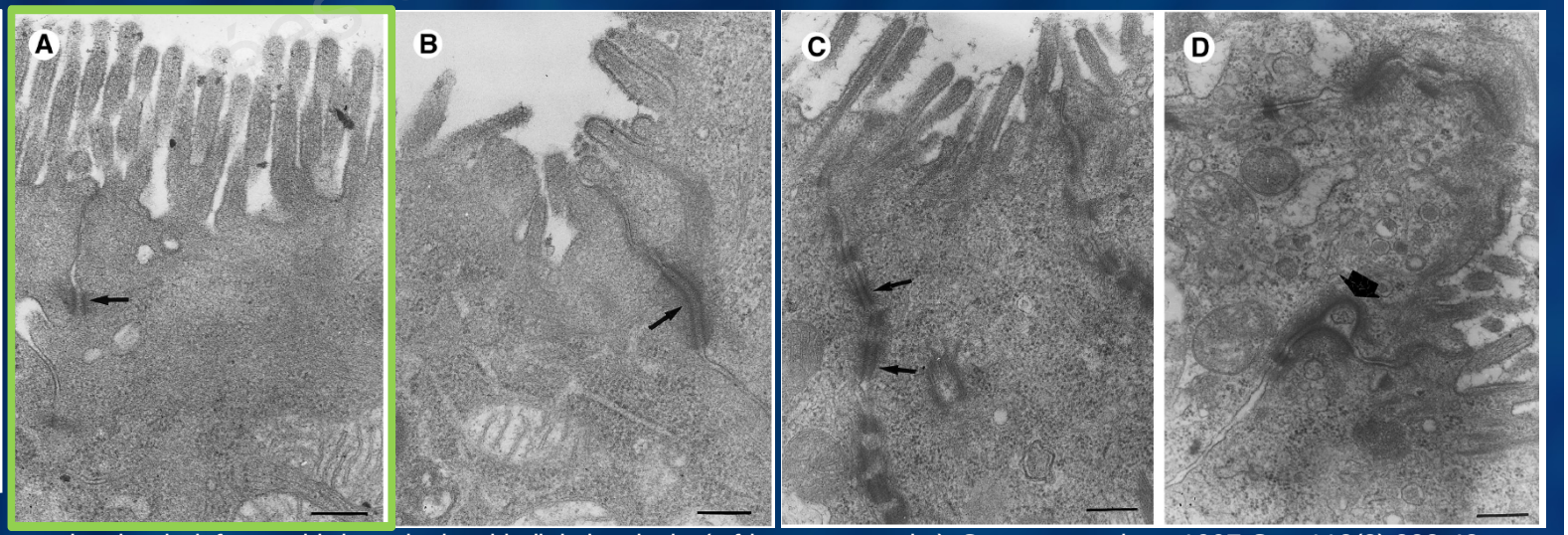


Duodénum : entérocytes nbreux et groupées formant des touffes.
Atrophie villositaire +/- infiltrat mononucléé de la lamina propria

Identification of EpCAM as the Gene for Congenital Tufting Enteropathy. Gastroenterology 2008;135:429–437

Advances in Evaluation of Chronic Diarrhea in Infants Gastroenterology. 2018 Jun;154(8):2045-2059.e6.

Anom. du dévpt et de la différenciat° entérocytR. Desmosomes trop nombx ou longs ou déformés



Distribution of cell adhesion molecules in infants with intestinal epithelial dysplasia (tufting enteropathy) Gastroenterology 1997 Sep;113(3):833-43

Atrophie microvillositaire
Maladie des inclusions de microvillosités

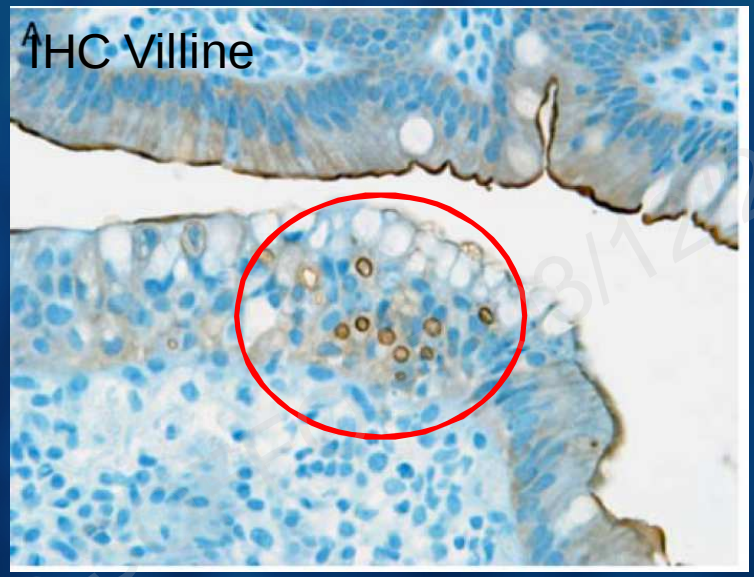
MYO5B
STX3

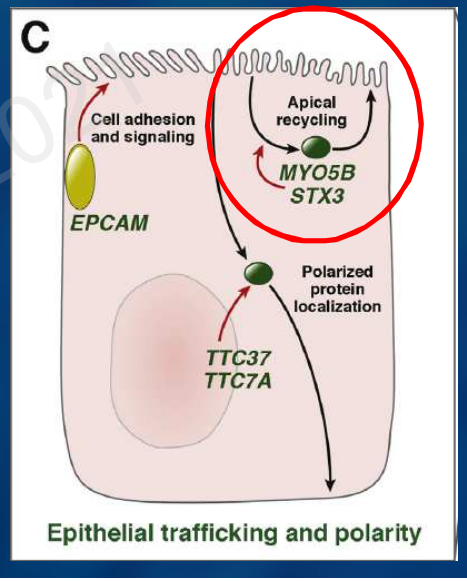
Microvillus inclusion disease

Perturbat° polarité apicale entérocytR. Inclusions de microvillosités

IHC Villine

IHC Villine

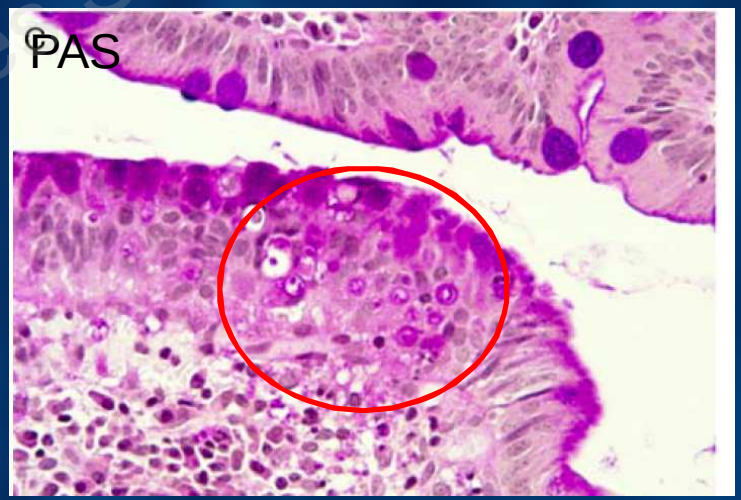


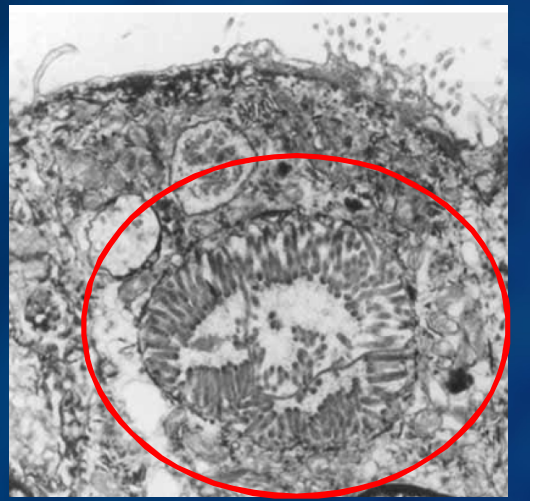


Duodénum :
Bordure en brosse de hauteur diminuée ou absente + inclusions annulaires de microvillosités

villine = protéine liée à l'actine des microvillosités

PAS





Villin immunohistochemistry is a reliable method for diagnosing microvillus inclusion disease Am J Surg Pathol. 2015 Feb;39(2):245-50.

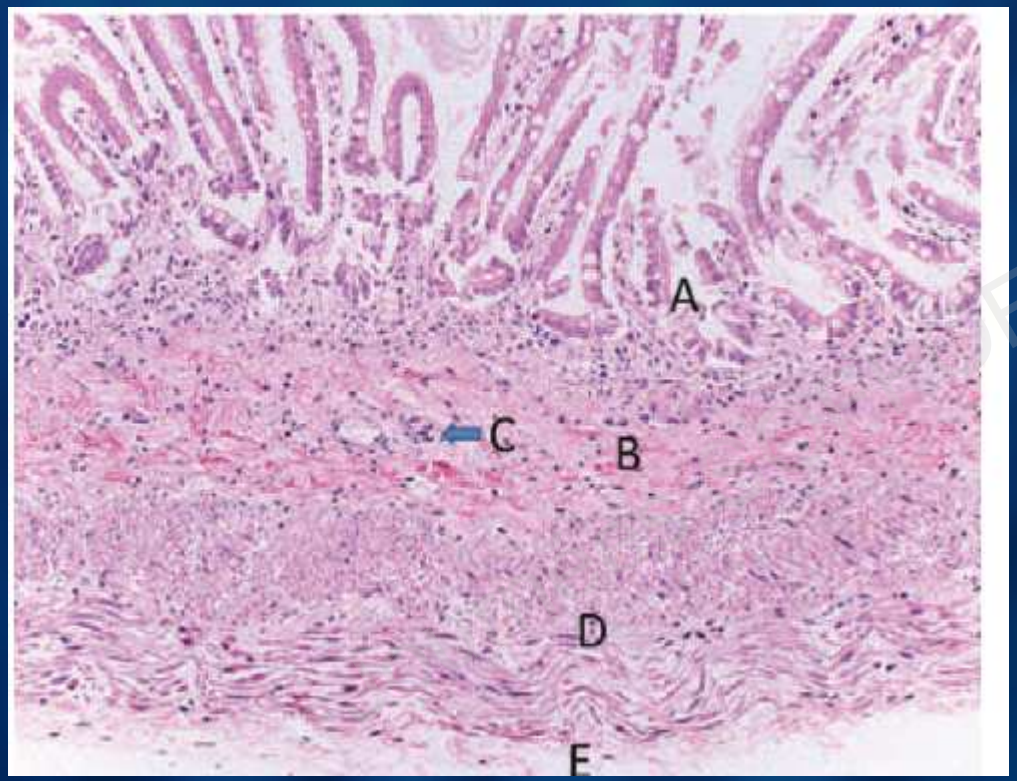
Pathology. 1992 Jul;24(3):170-1

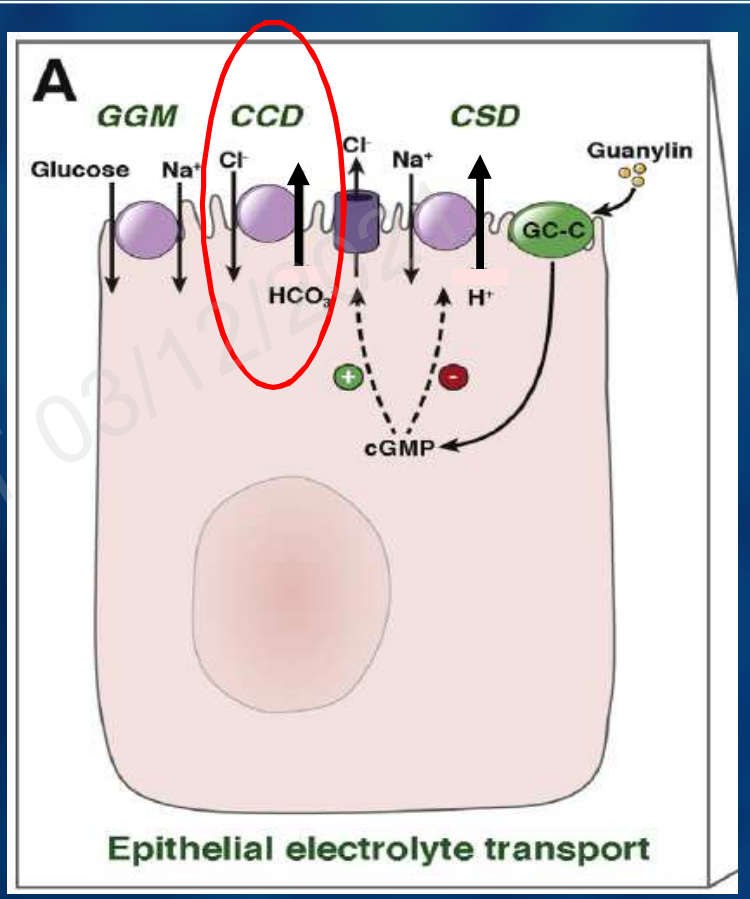
Diarrhée chlorée

Anom. de transport des électrolytes : Transporteur $Cl^-/HCO3^-$

SLC26A3 (AR)

Histologie normale





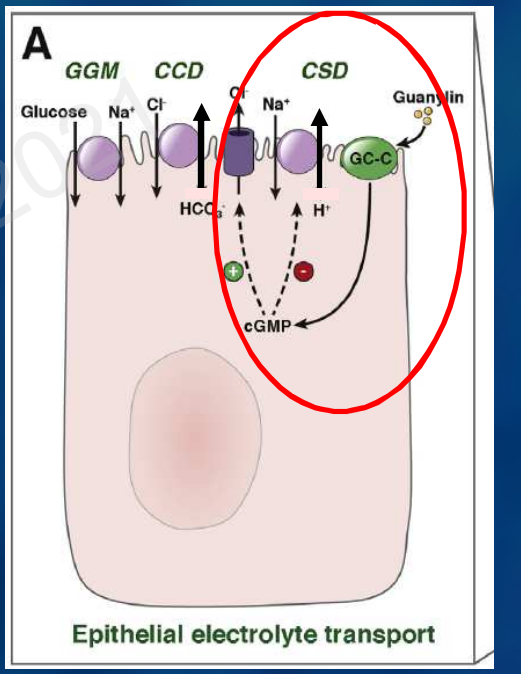
Advances in Evaluation of Chronic Diarrhea in Infants
Gastroenterology. 2018 Jun;154(8):2045-2059.e6.

J Clin Ultrasound . 2012 May;40(4):239-42.
Prenatal diagnosis and management of congenital chloride diarrhea: A case report of 2 siblings

Diarrhée sodée

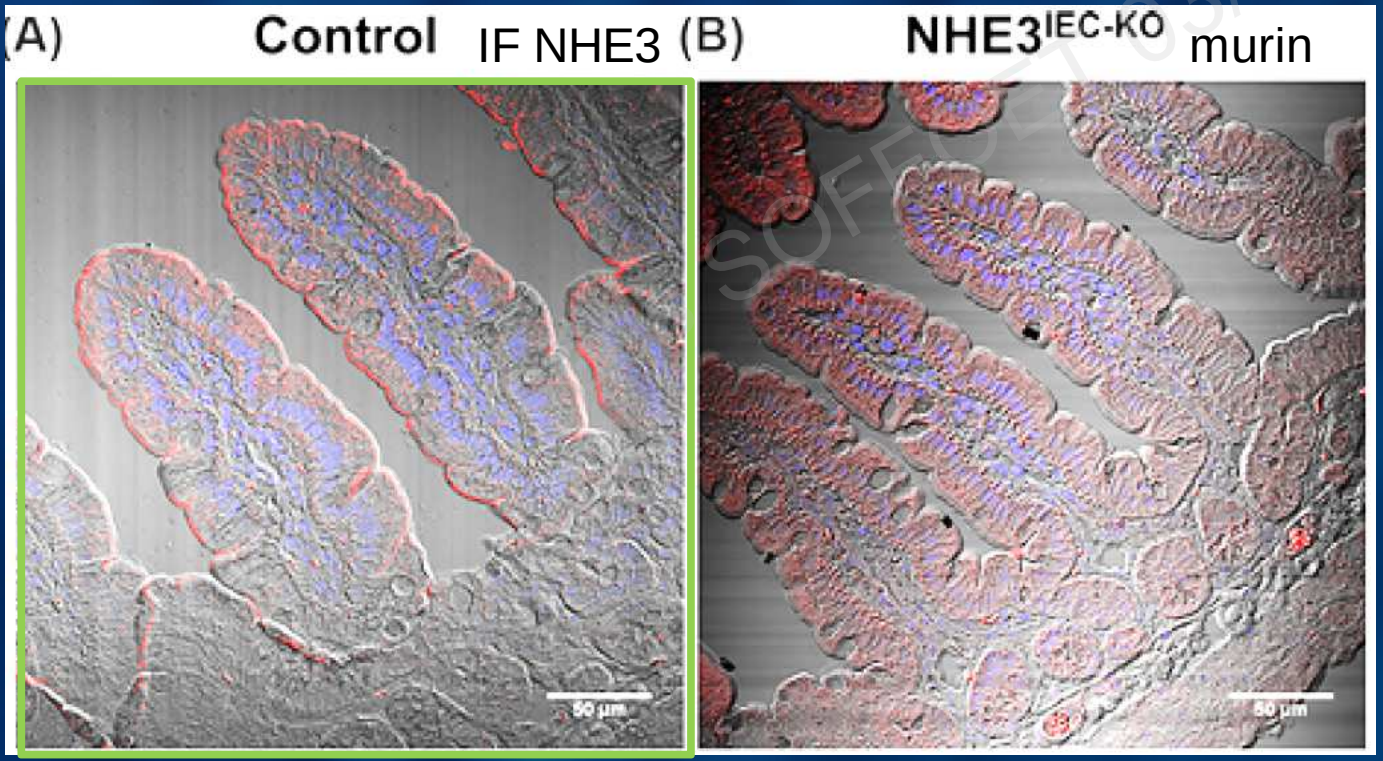
Anom. de transport des électrolytes :
- Transporteur Na^+/H^+
- ↗ cGMP

SLC9A3 (AR)
GUCY2C (AD)= Guanylyl cyclase 2C, gain de fonction

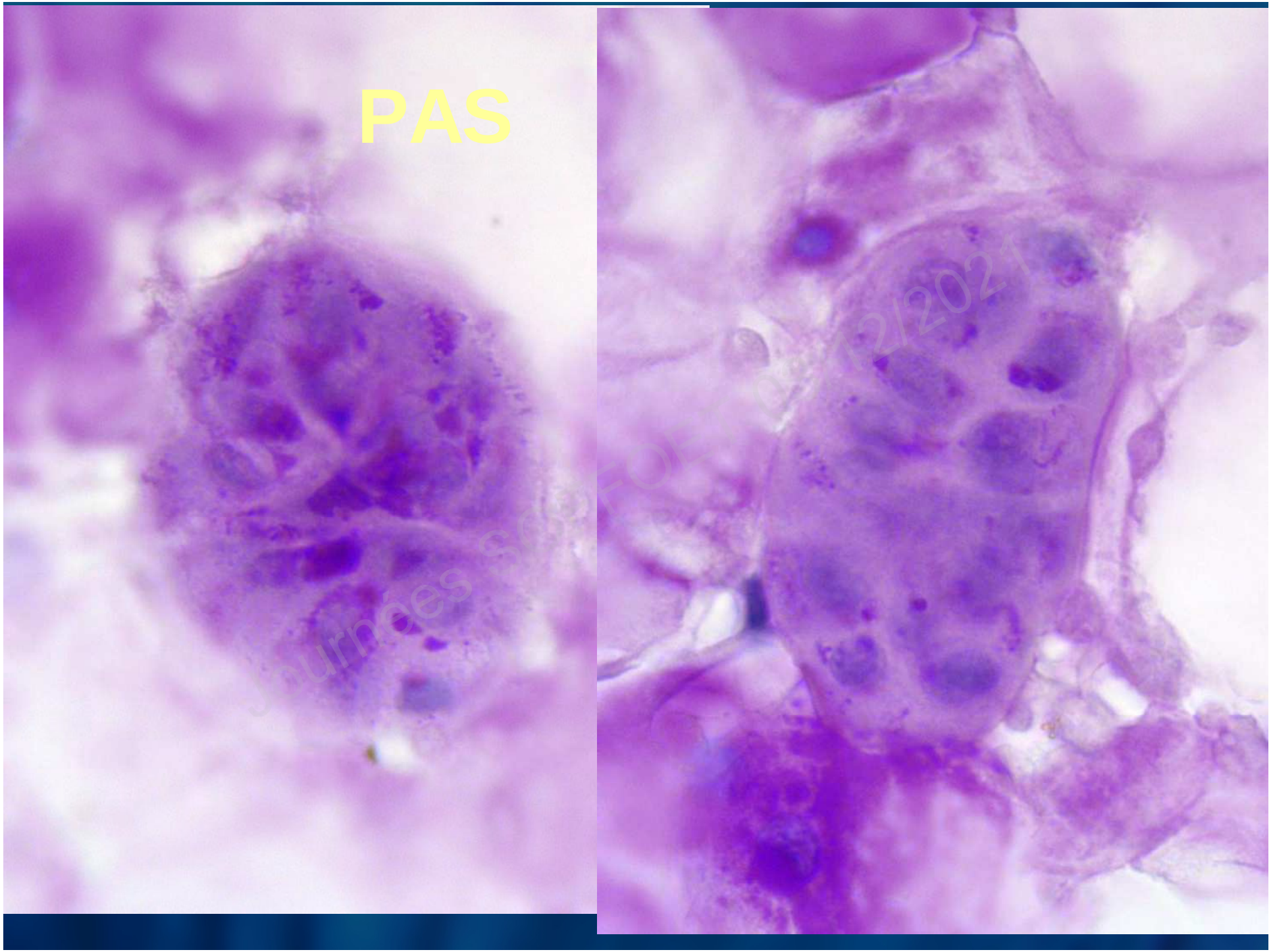


Advances in Evaluation of Chronic Diarrhea in Infants
Gastroenterology. 2018 Jun;154(8):2045-2059.e6.

NHE3 = SLC9A3



Modèle murin


PAS

Biochimie fœtale (LA)

- Enzymes digestives : ↗↗↗
  - GGTP = 135 MoM
  - LAP = 34 MoM
  - PAL (i) = 23,3 MoM
- Index de Bartter = 8
- Ionogramme :
  - Na+ = 132 mmol/L
  - Cl- = 110 mmol/L

= profil de fuite anale

= élimination du Bartter

= normal

GGTP = gamma-glutamyltranspeptidase

LAP = leucine aminopeptidase (=AMP)

PAL (i) = phosphatases alclalines intestinales (=iALP)

Index de Bartter = protéines (MoM) x AFP (MoM). Si Bartter : indice <1,1

Post-natal

- DCD à qq jours de vie (infection et thromboses - Necker)
- Dg biochimique de diarrhée chlorée
- étude *SLC26A3 (*NM_000111)

Polymorphisme intronique homozygote intron8:
C.971+3_971+4delAA (démontré **pathogène**)

- ?? Pas d'anomalies histologique??
- Présence de touffes d'entérocytes normaux ? entrainés par le flux diarrhéique ? (29 SA +3 J = après fermeture du sphincter anal)
- Touffes physiologiques ds le LA avant 20 SA???
- Ionogramme du LA Nl : équilibration via d'autres échanges (membranaires…) avec le sang maternel?

Diarrhée chlorée congénitale

Merci pour votre attention!