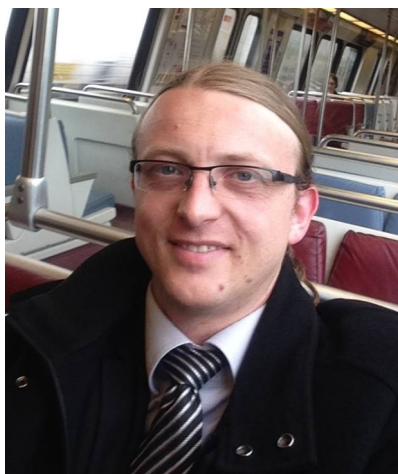




XIII^e symposium sur les prothèses pariétales



LES EVENTRATIONS COMPLEXES



COMMENT EVALUER LA PERTE DU DROIT DE DOMICILE ?

Y Renard , A Cagniet , JP Palot (Reims)



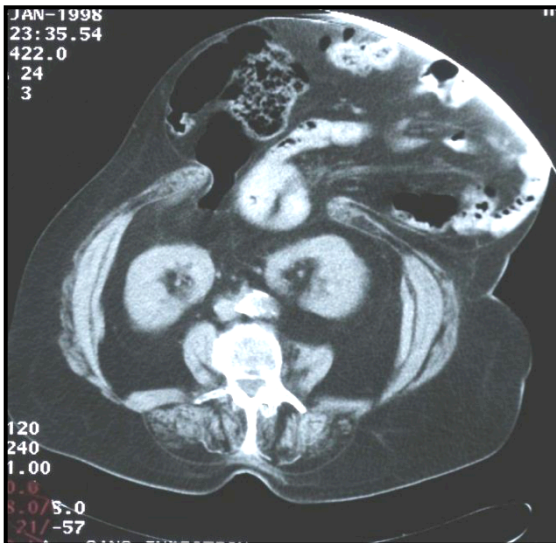


Criteria for definition of a complex abdominal wall hernia

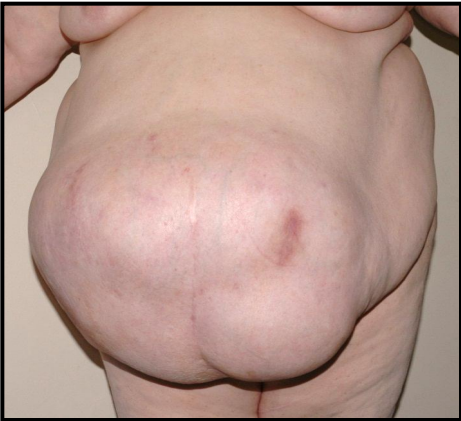
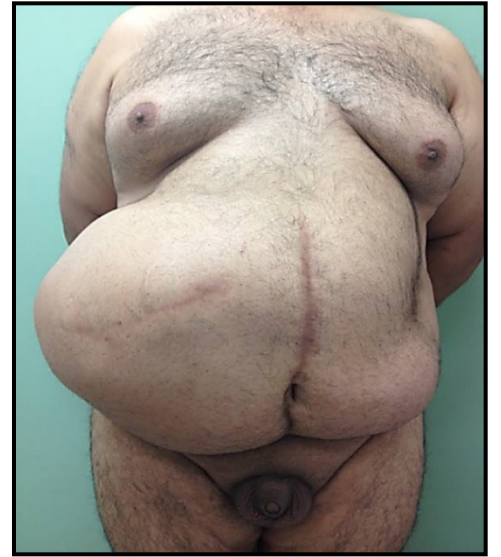
N. J. Slater · A. Montgomery · F. Berrevoet · A. M. Carbonell · A. Chang ·
M. Franklin · K. W. Kercher · B. J. Lammers · E. Parra-Davilla ·
S. Roll · S. Towfigh · E. van Geffen · J. Conze · H. van Goor



PERTE DU DROIT DE DOMICILE



When a large proportion of the abdominal contents resides permanently in the hernia sac (determined by CT imaging) one speaks of significant loss of intra-abdominal domain. This is considered by the consensus group to be a complex hernia as such. This might occur due to fascial retraction that might result after open abdomen treatment or delayed presentation of a huge hernia in progress.

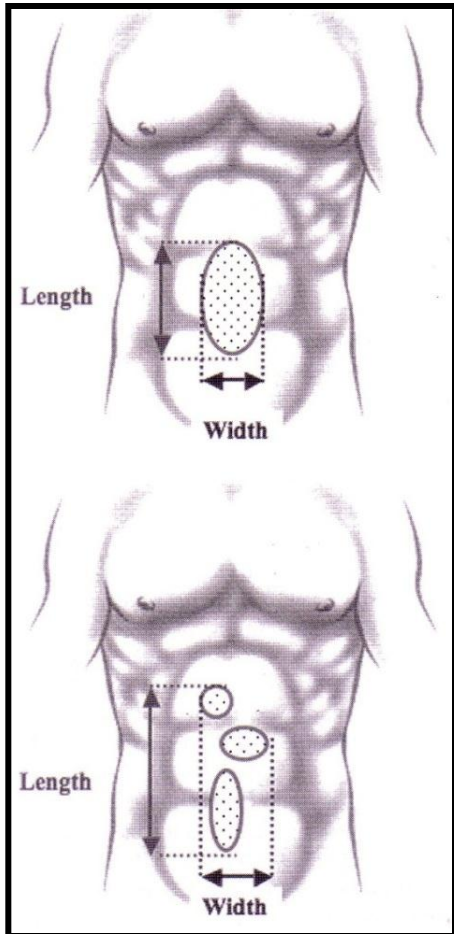


5 à 10% DES EVENTRATIONS

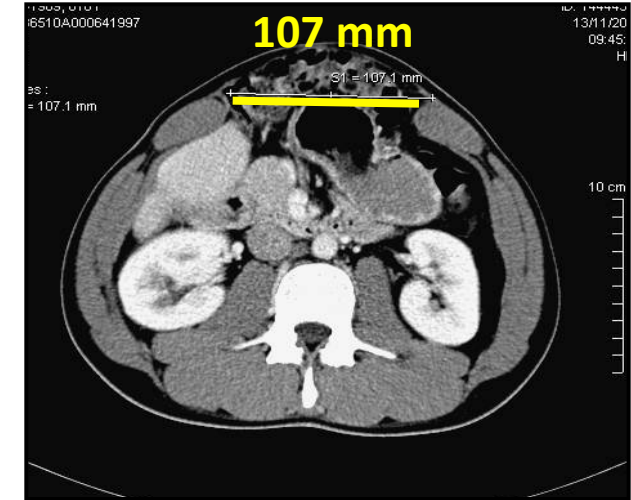
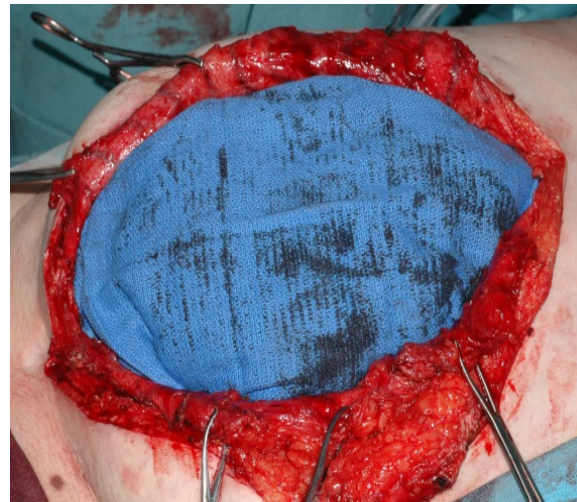
Criteria for definition of a complex abdominal wall hernia

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LES GRANDES EVENTRATIONS

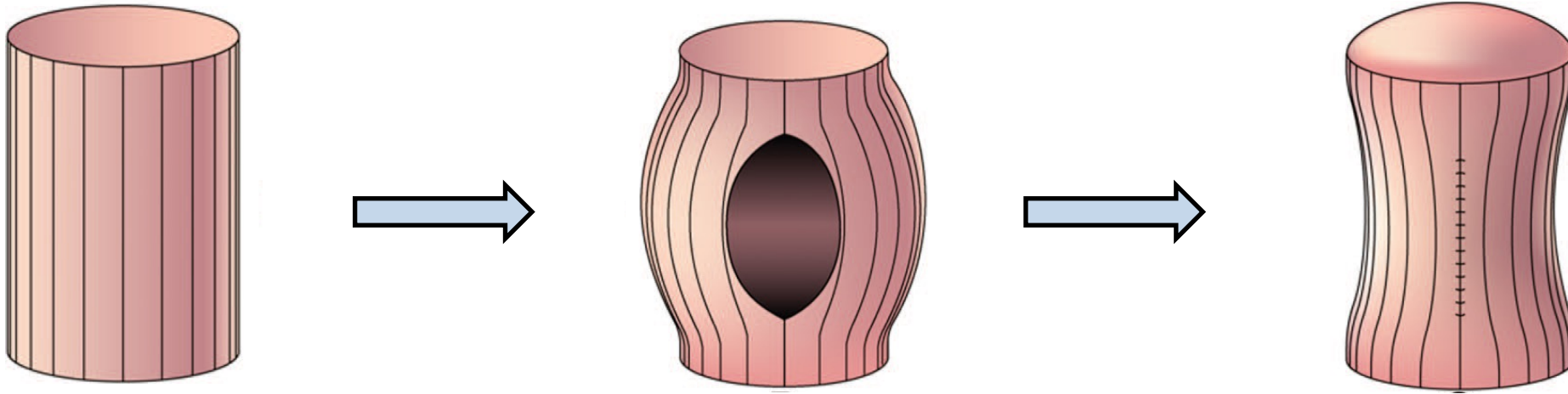


EHS



largeur de l'orifice ≥ 10 cm

DES RISQUES PARTICULIERS



**AUGMENTATION DE LA PRESSION INTRA ABDOMINALE ET ASCENSION DU DIAPHRAGME
→ INSUFFISANCE RESPIRATOIRE / SYNDROME DU COMPARTIMENT ABDOMINAL**

DIFFICULTES CHIRURGICALES : REINTEGRATION ET FERMETURE DE L' ORIFICE

COMMENT MESURER LA PERTE DE DROIT DE DOMICILE ?



COMMENT MESURER LE RISQUE DE LA REINTEGRATION ET DE LA FERMETURE ?

- **LA CLINIQUE :**

- parfois évidente
- le caractère irréductible de l'éventration : pas suffisant (adhérences)

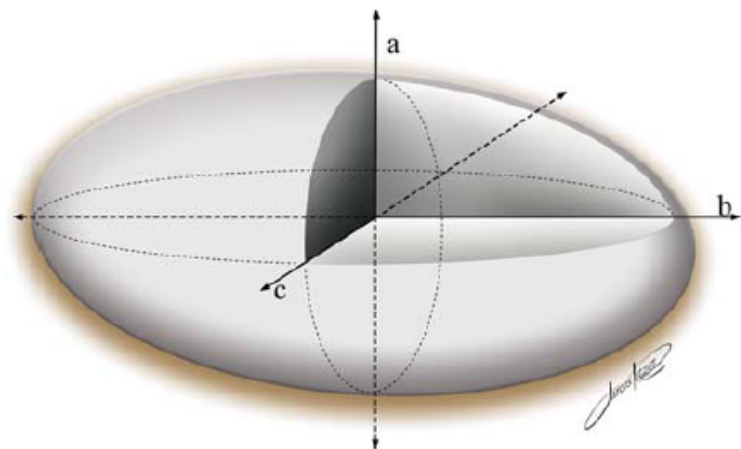
- **L'IMAGERIE +++ : TOMO-DENSITOMETRIE**

- taille de l'orifice
- volumes
- mesures statiques ne tenant pas compte de l'élasticité pariétale



A computerized tomography scan method for calculating the hernia sac and abdominal cavity volume in complex large incisional hernia with loss of domain

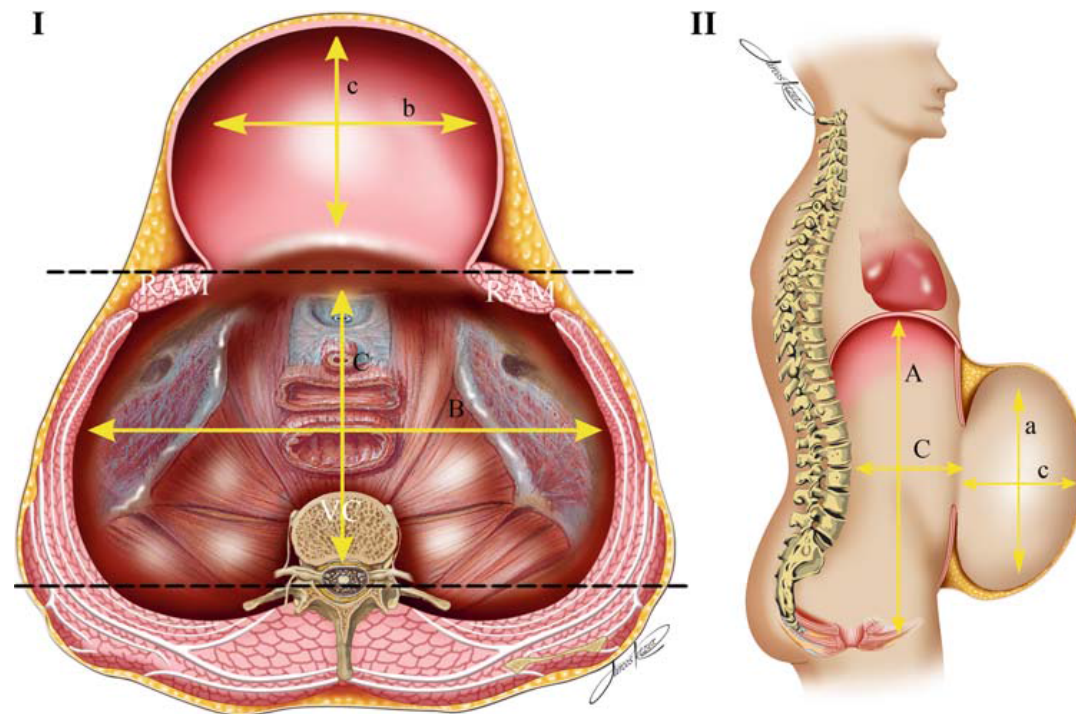
E. Y. Tanaka · J. H. Yoo · A. J. Rodrigues Jr. ·
E. M. Utiyama · D. Birolini · S. Rasslan



Volume ellipse = $\frac{4}{3} \times \pi \times r1 \times r2 \times r3$

synt TDM : ACV or IHV = $0.52 \times a \times b \times c$

TOMO-DENSITOMETRIE

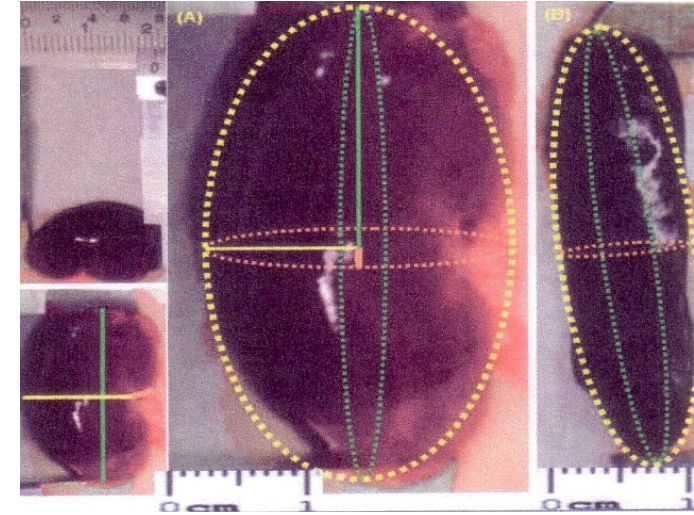
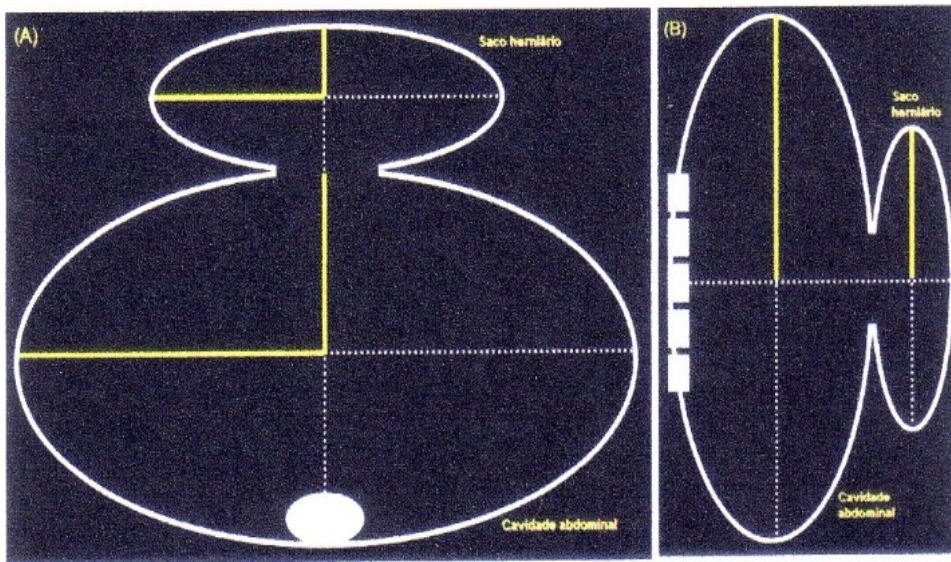


Calcul manuel

VOLUME CALCULATION OF RATS' ORGANS AND ITS APPLICATION IN THE VALIDATION OF THE VOLUME RELATION BETWEEN THE ABDOMINAL CAVITY AND THE HERNIAL SAC IN INCISIONAL HERNIAS WITH "LOSS OF ABDOMINAL DOMAIN"

Cálculo do volume de órgãos de ratos e sua aplicação na validação da relação de volumes entre a cavidade abdominal e o saco herniário em hérnias incisionais com "perda de domicílio"

Luz Marina Gonçalves de **ARAÚJO**, Leonardo Carvalho **SERIGIOLLE**, Helbert Minuncio Pereira **GOMES**, Daren Athié Boy **RODRIGUES**, Carolina Marques **LOPES**, Pedro Luiz Squilacci **LEME**

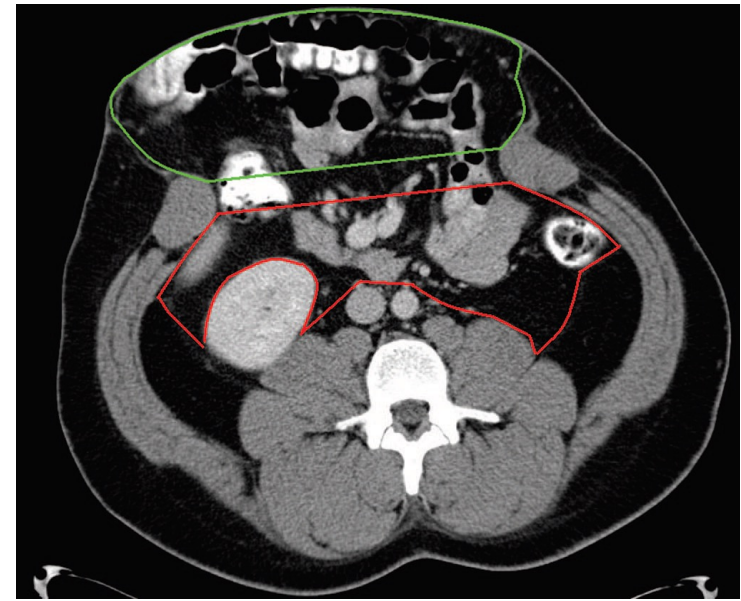
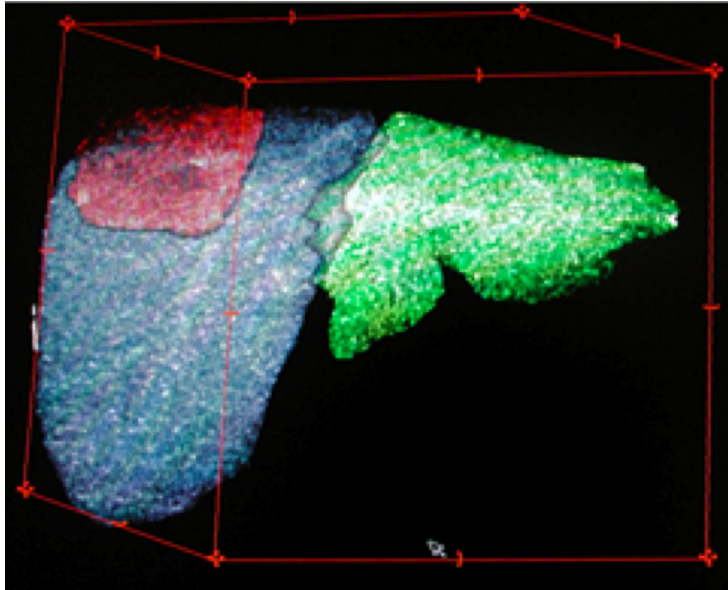


comparaison volume calculé/ volume mesuré (ARCHIMEDE)

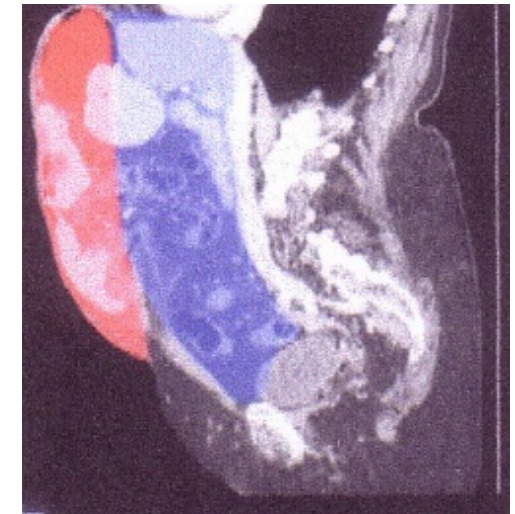
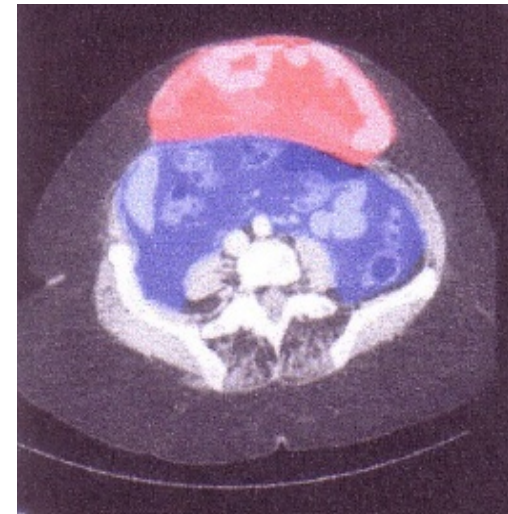


Méthode de calcul fiable

CALCUL DES VOLUMES PAR TDM



Surlignage des espaces



Calcul des volumes par le logiciel

Hernia (2012) 16:33–40
DOI 10.1007/s10029-011-0849-2

ORIGINAL ARTICLE

Progressive preoperative pneumoperitoneum preparation (the Goni Moreno protocol) prior to large incisional hernia surgery: volumetric, respiratory and clinical impacts. A prospective study

C. Sabbagh · F. Dumont · D. Fuks ·
T. Yzet · P. Verhaeghe · J.-M. Regimbeau

e-mémoires de l'Académie Nationale de Chirurgie, 2010, 9 (2) : 103-106

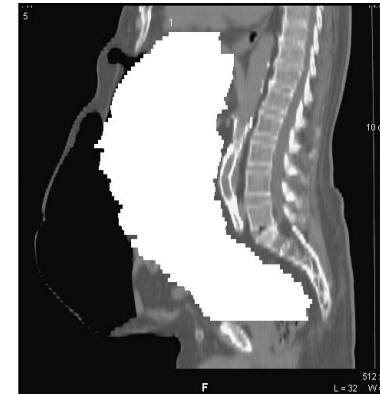
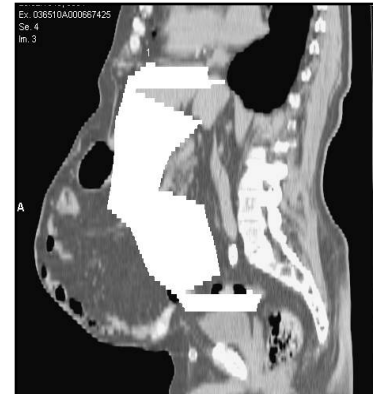
103

Efficacité du pneumopéritoine progressif préopératoire dans le traitement des grandes éventrations : évaluation volumétrique par tomodensitométrie

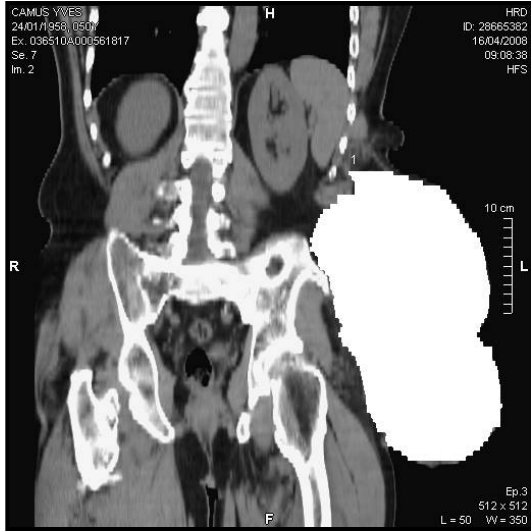
S. Lardièrre-Deguelte *, F. Appéré *, AV. Goia *, C. Marcus **, JB. Flament, JF. Delattre *, JP. Palot *

* CHU Reims, Hôpital Robert Debré, Service de chirurgie générale et endocrinienne, 51092 Reims / ** CHU Reims, Hôpital Robert Debré, Service de Radiologie, 51092 Reims

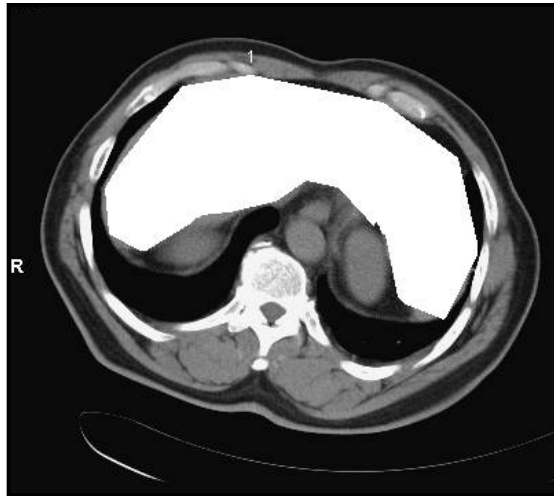
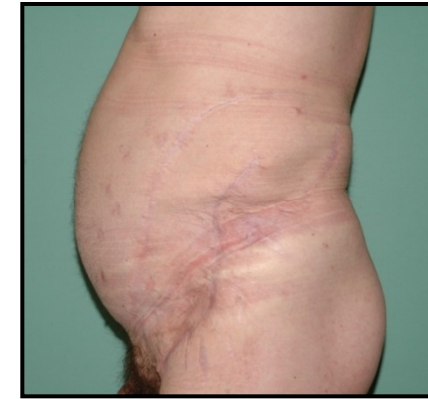
	Avant PPP (mm)	Après PPP (mm)	p
Hauteur éventration	120,4	132,8	NS
Largeur éventration	101,2	117,1	0,049
Largeur mm droits D	111,4	118	NS
Largeur mm droits G	110	114	NS
Lg paroi antérolat D	211	253,5	0,0076
Lg paroi antérolat G	192,5	223,6	0,026
Lg totale mm de l'abdomen	625,5	709,5	0,0044



AUGMENTATION MOYENNE DU VOLUME DE LA CAVITE ABDOMINALE = 52,7%



VOI	1
Volume [cm ³]	6319.70
Hauteur [cm]	30.50
Moyenne [UH]	-59.0
Ecart type [UH]	152.8
Seuil inf. [UH]	---
Seuil sup. [UH]	---
Limite inférieure [UH]	-1024
Limite supérieure [UH]	3071



VOI	1
Volume [cm ³]	4652.67
Hauteur [cm]	31.50
Moyenne [UH]	-9.7
Ecart type [UH]	154.9
Seuil inf. [UH]	---
Seuil sup. [UH]	---
Limite inférieure [UH]	-1024
Limite supérieure [UH]	3071

- Volume de l' éventration (VE)
- Volume de la cavité abdominale (VCA)

Ratio VE/VE+VCA : % extériorisé

RATIO : 57,6%

QUAND PEUT ON PARLER DE « PERTE DE DROIT DE DOMICILE » ?



The Royal College of Surgeons of England

Ann R Coll Surg Engl 2004; **86**: 363–366
doi 10.1308/147870804236

Audit

Open mesh repair of incisional hernias with significant loss of domain

AN Kingsnorth, N Sivarajasingham, S Wong, M Butler

15 à 20%

Hernia (2010) 14:63–69
DOI 10.1007/s10029-009-0560-8

ORIGINAL ARTICLE

A computerized tomography scan method for calculating the hernia sac and abdominal cavity volume in complex large incisional hernia with loss of domain

E. Y. Tanaka · J. H. Yoo · A. J. Rodrigues Jr. ·
E. M. Utiyama · D. Birolini · S. Rasslan

25%



Hernia (2011) 15:559–565
DOI 10.1007/s10029-011-0832-y

ORIGINAL ARTICLE

Peritoneal volume is predictive of tension-free fascia closure of large incisional hernias with loss of domain: a prospective study

C. Sabbagh · F. Dumont · B. Robert ·
R. Badaoui · P. Verhaeghe · J.-M. Regimbeau

20%

Peritoneal volume is predictive of tension-free fascia closure of large incisional hernias with loss of domain: a prospective study

C. Sabbagh · F. Dumont · B. Robert ·
R. Badaoui · P. Verhaeghe · J.-M. Regimbeau

Table 2 Multivariate analysis of predictive factors for tension-free fascia closure of LIHLD

	Odds ratio	95% confidence interval	<i>P</i> -value
BMI	1.19	0.83–1.7	ns
Incisional hernia surface area (cm ²)	1	0.98–1.02	ns
IHV/PV ratio <20%	35	1.38–888	<0.05

ns non-significant difference

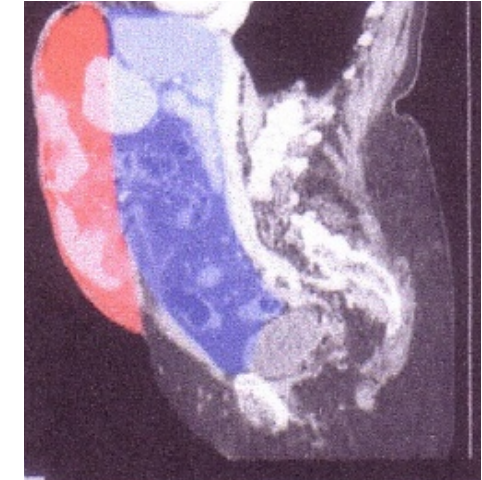
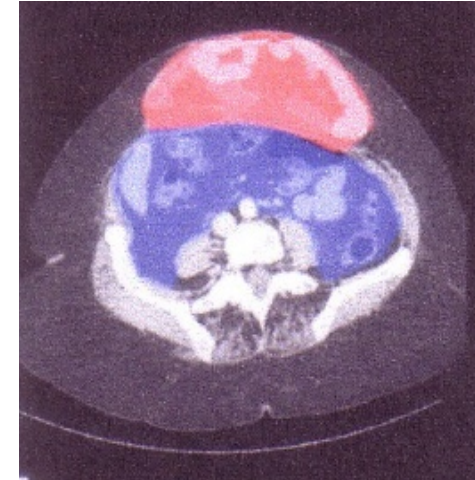
**AU DELA DE 20% DU VOLUME TOTAL
EXTERIORISE : RISQUE DE SURPRESSION**

Quantitative CT Imaging of Ventral Hernias: Preliminary Validation of an Anatomical Labeling Protocol

Zhoubing Xu^{1*}, Andrew J. Asman¹, Rebecca B. Baucom², Richard G. Abramson³,
Benjamin K. Poulouse², Bennett A. Landman^{1,3}

¹ Electrical Engineering, Vanderbilt University, Nashville, Tennessee, United States of America,
² Department of Surgery, Division of General Surgery, Vanderbilt University Medical Center, Nashville,
Tennessee, United States of America, ³ Radiology and Radiological Sciences, Vanderbilt University,
Nashville, Tennessee, United States of America

* zhoubing.xu@vanderbilt.edu



$$\beta_0, \beta = \underset{\beta_0, \beta}{\operatorname{argmin}} \left(\frac{1}{N} \operatorname{Deviance}(\beta_0, \beta) + \lambda P_\alpha(\beta) \right) \quad (1)$$

where the $\operatorname{Deviance}(\cdot, \cdot)$ was computed under binomial distribution for logistic regression [16] to deal with binary categorical cases while estimating the odds in a continuous form. λ represents a non-negative regularization parameter for the penalty term $P_\alpha(\beta)$.

$$P_\alpha(\beta) = \frac{1 - \alpha}{2} \|\beta\|_2^2 + \alpha \|\beta\|_1 \quad (2)$$

CONCLUSIONS

- **Le TDM abdomino-pelvien avec étude volumétrique permet :**
 - d' évaluer objectivement le volume viscéral extériorisé (ratio $VE/VE+VCA$)
 - de mesurer la taille de l' orifice
 - d' anticiper les difficultés de réintégration et de fermeture
 - de sélectionner les patients qui devront bénéficier d' une préparation (Goni Moreno, chirurgie bariatrique, toxine botulinique)
 - d' apprécier les résultats de la préparation

- **RATIO? $\geq 20\%$?**