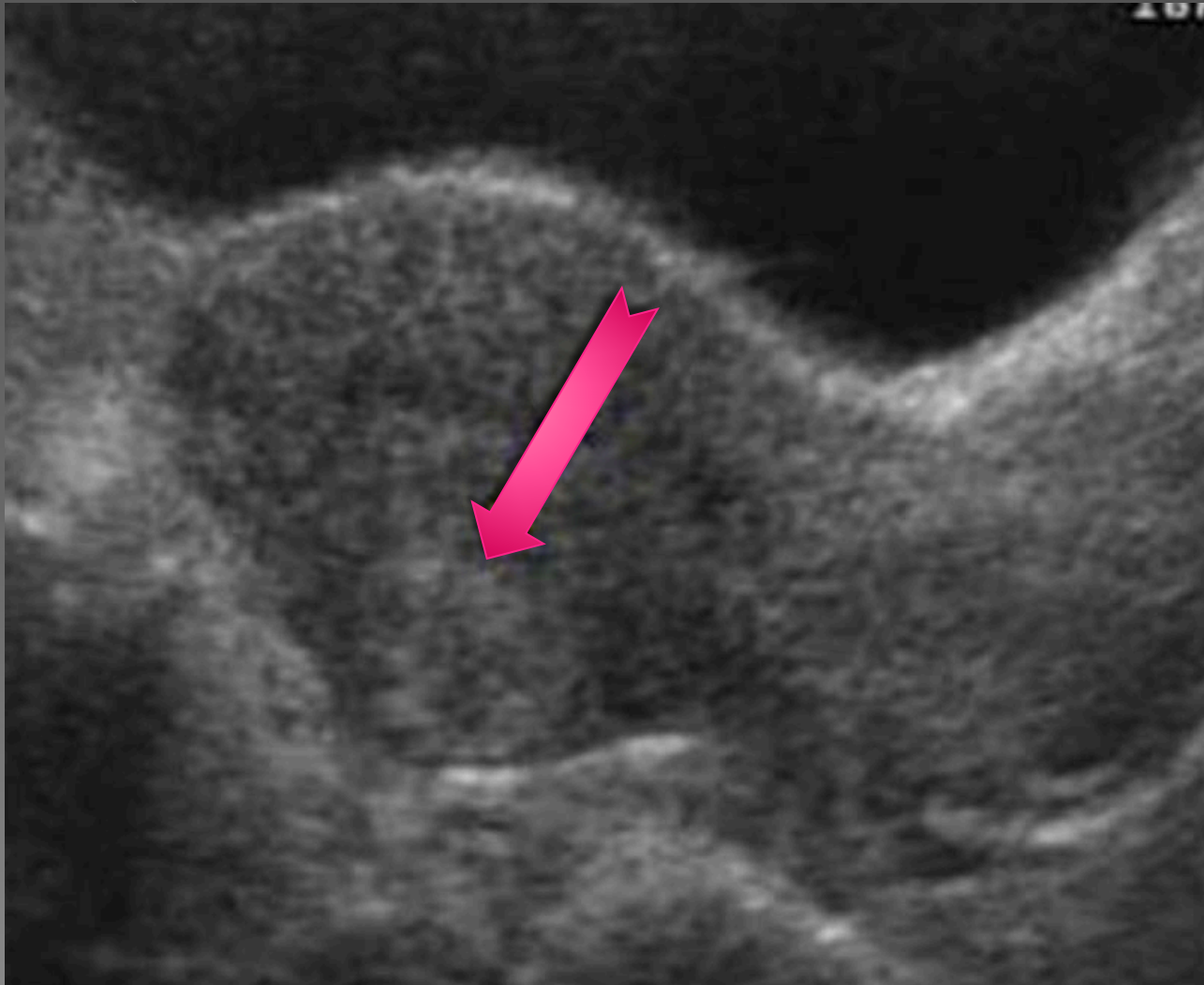


Le léiomyome utérin: Un enjeu de taille

Lavigna Lavoie,
R5, Programme de Radiologie,
En collaboration avec Dr. Voyer, Dr. Bédard et Dr. Benko,
Université de Sherbrooke
4 octobre 2017

Mise en contexte

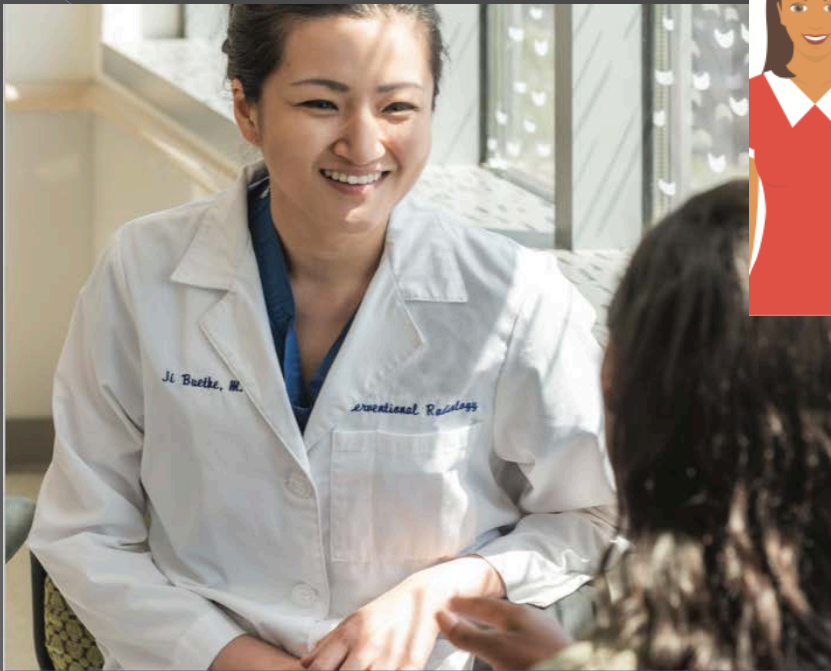


Mise en contexte



Mise en contexte





THE FIBROID FIX: WHAT WOMEN NEED TO KNOW

Uterine fibroid embolization avoids surgery, preserves the uterus, controls symptoms and improves quality of life



A **UTERINE FIBROID** is a type of tumor that occurs in the uterus. These growths are typically not dangerous but for some, the symptoms can be difficult to face.

SYMPTOMS INCLUDE



The survey found a lack of awareness about uterine fibroids

28%

Have never heard of uterine fibroids

57%

Don't think they're at risk

37%

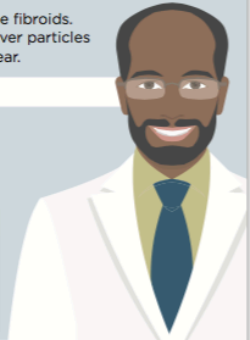
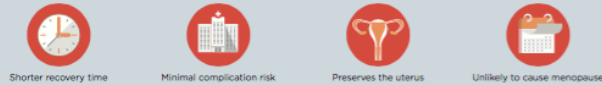
Do not know anyone diagnosed with fibroids

19%

Believe fibroids are cancerous, requiring uterus removal

UTERINE FIBROID EMBOLIZATION (UFE) is a minimally invasive treatment for uterine fibroids. Through a tiny incision in the skin, an interventional radiologist uses a catheter to deliver particles that block the blood vessels leading to the fibroids, causing them to shrink or disappear.

BENEFITS OF UFE



Despite these benefits, many women don't know about UFE



MOST WOMEN WILL BE AFFECTED by uterine fibroids by the time they are 50. Unfortunately, women diagnosed with uterine fibroids are not being given the information they need to make informed decisions about their health.

Of women diagnosed with uterine fibroids

59%

Say knowing that their doctor has discussed all options with them is the most important factor for selecting a treatment

44%

Have never heard of UFE

11%

Think hysterectomy is the only treatment option



August 29, 2017



METHODOLOGY: SIR commissioned a poll, conducted online by Harris Poll between June 23 and 27, 2017 among 1,176 U.S. women ages 18 and over, to better understand awareness of uterine fibroids and treatment options.

Uterine sarcomas: clinical presentation and MRI features

Original Article

Uterine Sarcomas in Patients Undergoing Surgery for Presumed Leiomyomas: 10 Years' Experience

P. G. Paul, MB, DGO*, Varsha Rengaraj, MBBS, MS, Tanuka Das, MBBS, Reena Garg, MBBS, DGO, Manju Thomas, MBBS, MS, and Aditya S. Khurd

From the Centre for Advanced Endoscopy and Infertility, Paul's Hospital, Cochin, Kerala, India (all authors).

Review of Leiomyoma Variants

Elizabeth Kagan Arleo¹
Peter E. Schwartz²
Pei Hu³
Shirley McCarthy⁴

OBJECTIVE. The purpose of this article is to review the clinical, imaging, and pathologic features of leiomyoma variants.
CONCLUSION. Fortunately, most of these variants are rare and have a benign natural history, given currently there are no significant series to establish definitive clinical or imaging findings that can reliably distinguish among them. Although there are some suggestive features, the diagnosis of a leiomyoma variant is usually made postoperatively at pathologic examination.

SOGC CLINICAL PRACTICE GUIDELINE

No. 318, February 2015 (Replaces, No. 128, May 2003)

The Management of Uterine Leiomyomas

Radiology

Management of Uterine Fibroids: A Focus on Uterine-sparing Interventional Techniques¹

UROGENITAL

How to differentiate benign from malignant myometrial tumours using MR imaging

Isabelle Thomassin-Naggara · Sophie Dechoux · Claire Bonneau · Audrey Morel · Roman Rouzier ·

copies for distribution to your colleagues or clients, contact us at www.rsna.org/rrnarrights.

The Added Role of MR Imaging in Treatment Stratification of Patients with Gynecologic Malignancies: What the Radiologist Needs to Know¹

3 / Published online: 8 April 2013

RadioGraphics

PELVIC BLEEDING: TREATMENT AND IMAGING

E251

Role of MR Imaging of Uterine Leiomyomas before and after Embolization¹

RadioGraphics

PELVIC BLEEDING: TREATMENT AND IMAGING

1735

Current Concepts in Uterine Fibroid Embolization¹

Radiology

The Added Role of MR Imaging in Treatment Stratification of Patients with Gynecologic Malignancies: What the Radiologist Needs to Know¹

Radiology

Spontaneous Pregnancy with a Live Birth after Conventional and Partial Uterine Fibroid Embolization¹

Uterine sarcomas: clinical presenta

Original Article

Uterine Sarcomas in Patients Undergoing Hysterectomy for Presumed Leiomyomas: 10 Year

P. G. Paul, MB, DGO*, Varsha Rengaraj, MB

Review of Leiomyoma Variants

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L PRACTICE GUIDELINE

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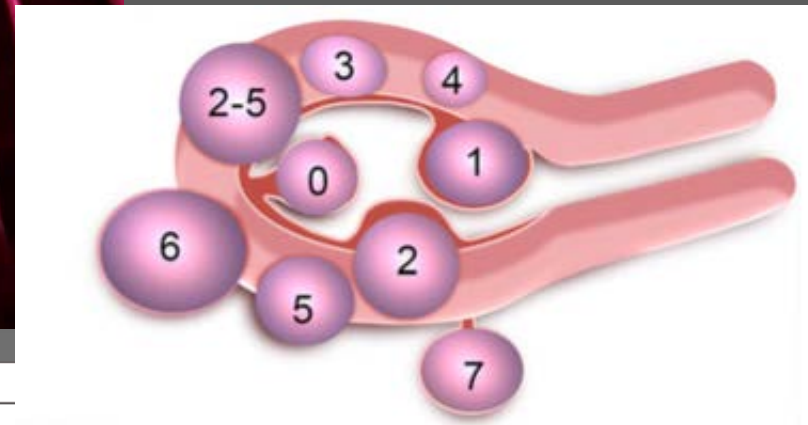
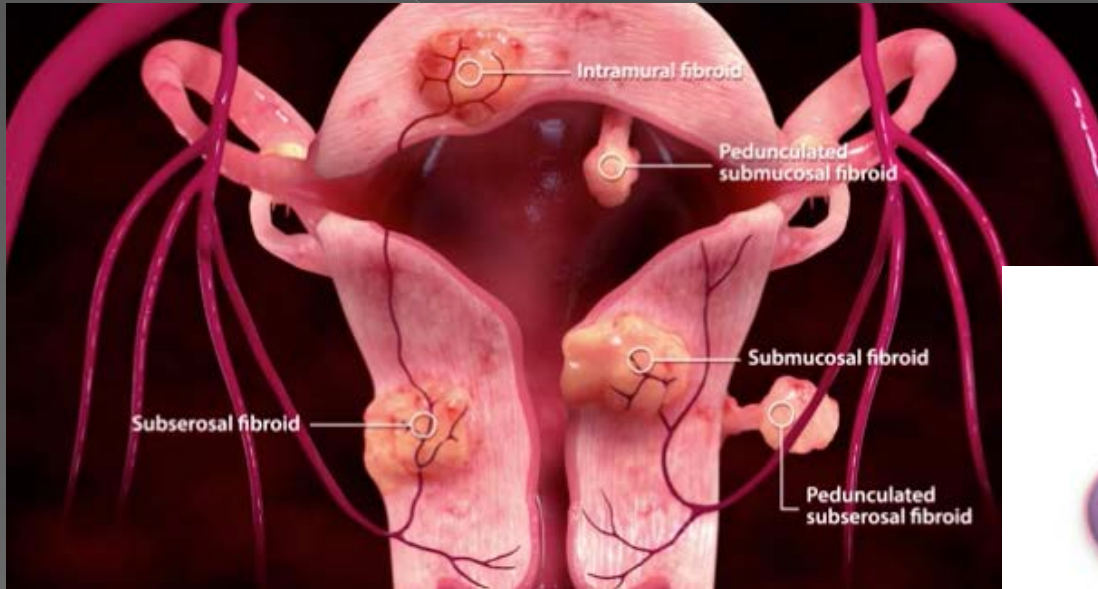
Plan

- Démystifier le Léiomyome – le Léiomyosarcome utérin
 - > Type - Localisation
 - > Clinique
 - > Imagerie
- Les traitements disponibles
 - > Hystérectomie
 - > L'embolisation des artères utérines
 - > Autres
- Dans notre milieu
- Questions

Le Léiomyome Utérin - Type

- Léiomyome — Bénin
 - > Sans Dégénérescence
 - > Avec Dégénérescence
 - Kystique
 - Hémorragique
 - Lipoléiomyome
 - Hyaline
 - Myxoïde
- Variante de léiomyome
 - > Cellulaire
 - > Atypique
 - > STUMP
- Léiomyosarcome — Malin

Localisation - Classification FIGO



S – Sous-muqueux	0	Pédiculé, endocavitaire
	1	< 50 % intramural
A – Autres	2	≥ 50 % intramural
	3	Est en contact avec l'endomètre; 100 % intramural
	4	Intramural
	5	Sous-séreux, ≥ 50 % intramural
	6	Sous-séreux, < 50 % intramural
	7	Sous-séreux, pédiculé
	8	Autre (à préciser, p. ex. cervical, parasitaire)

Le Léiomyome utérin

- Tumeur **bénigne** gynécologique la plus fréquente
- **30%** Femmes en âge de procréer et **70 à 80%** Femmes > 50 ans
- 20 à 50% vont être symptomatiques
 - > Douleurs pelviennes, ménorragies, urgences mictionnelles
 - > Dyspareunie, constipation
 - > Infertilité
- Hormone-Dépendant
 - > Diminue après la ménopause
- Facteurs de risque
 - > Africo-Américaine
 - > > 40 ans
 - > HTA/DB/Obésité
 - > ATCD familiaux
 - > Nulliparité

Le Sarcome utérin

Néoplasie mésoenchymateuse maligne

- 2 à 5 % des cancers utérins
- Incidence : 3 à 7/100 000
- Sous-types:
 - > Carcinosarcome
 - > Sarcome stromal endométrial
 - > **Léiomyosarcome**
 - <1% des cancers utérins
 - Vaste majorité des Sarcomes utérins
 - Incidence : 0.36/100 000
 - Présentation
 - Nouvelle lésion
 - Transformation sarcomateuse d'un léiomyome utérin (0.20%)

Uterine Sarcomas in Patients Undergoing Surgery for Presumed Leiomyomas: 10 Years' Experience

P. G. Paul, MB, DGO*, Varsha Rengaraj, MBBS, MS, Tanuka Das, MBBS, MS, DNB, Reena Garg, MBBS, DGO, Manju Thomas, MBBS, MS, and Aditya S. Khurd, MBBS, DNB, FRM

From the Centre for Advanced Endoscopy and Infertility, Paul's Hospital, Cochin, Kerala, India (all authors).

2678 Patients : 12 à 53 ans
Chx pour un Léiomyome Sx
5 patients Léiomyosarcome
Incidence LMS : 0.17% (1/594)

Uterine leiomyosarcoma: Epidemiology, contemporary treatment strategies and the impact of uterine morcellation☆☆☆

Stephanie Ricci ^a, Rebecca L. Stone ^b, Amanda N. Fader ^{b,*}

^a Division of Gynecologic Oncology, Women's Health Institute, Cleveland Clinic, Cleveland, OH, USA

^b Kelly Gynecologic Oncology Service, Department of Gynecology and Obstetrics, Johns Hopkins School of Medicine, Baltimore, MD, USA

Table 3
Large or contemporary studies reporting on incidence of occult uterine sarcoma in women undergoing hysterectomy for presumed benign disease.

Author	Year published	Total patients	No. of uterine sarcoma cases	Uterine sarcoma rate	No. of LMS cases	LMS rate
Parker et al. [48]	1994	1222	3	0.23	1	0.07
Pritts et al. [33]	2015	30,193	NR ^a	NR	3	0.002
Raine-Bennett et al. [45]	2016	125	125	0.36	NR	
Lieng et al. [38]	2015	4791	NR	NR	6	0.13
Mahnert et al. [37]	2015	6366	12	0.19	NR	NR
Kho et al. [34]	2016	10,119	9	0.09	NR	NR

^a No. = number; NR = not reported; LMS = uterine leiomyosarcoma.

- Symptômes:
 - > Mêmes que le léiomyome

- Facteurs de risque:
 - > Âge
 - > 40 ans et surtout > 50 ans, soit après la ménopause
 - Jeune âge
 - n'exclut pas le Dx
 - > Race
 - > Tamoxifen (5 ans ou plus)
 - > Irradiation Pelvienne

Uterine leiomyosarcoma: Epidemiology, contemporary treatment strategies and the impact of uterine morcellation☆☆☆

Stephanie Ricci ^a, Rebecca L. Stone ^b, Amanda N. Fader ^{b,*}

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Mahnert et al. [37]	2015	6360	12	0.19	NR	NR
Kho et al. [34]	2016	10,119	9	0.09	NR	NR

^a No. = number; NR = not reported; LMS = uterine leiomyosarcoma.

○ Symptômes:

> Mêm

Aucun symptôme clinique fiable pour différencier un léiomyome d'un léiomyosarcome

○ Facteurs de risque:

surtout > 50
près la
e
: n'exclue

> Irradiation Pelvienne

Imagerie

Léiomyome

Masse solide

Bien circonscrite

Taille variable : petit à importante

Calcifications

Homogène ou Hétérogène

Hypervasculaire

Unique ou multiple

Léiomyosarcome

Masse solide

Mal défini et irrégulier

De taille importante

Peu de calcifications

Hétérogène

Hypervasculaire

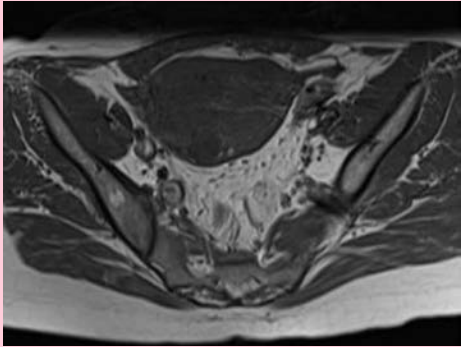
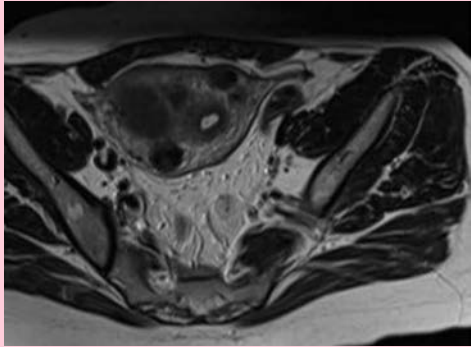
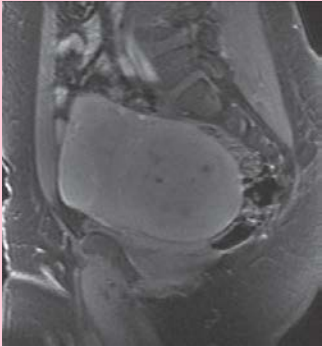
Souvent unique

Utéromégalie important


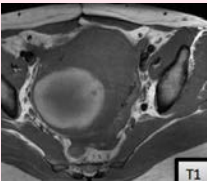
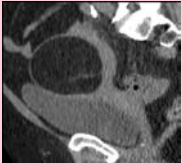
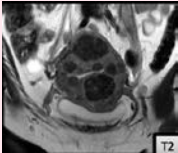
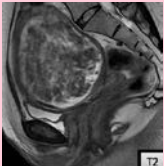
Aucune trouvaille échographique fiable pour différencier un léiomyome d'un léiomyosarcome

Quand devons-nous référer un patient pour une IRM ???

Imagerie – IRM

Léiomyome Sans Dégénérescence	T1	T2	Post contraste
	<p data-bbox="533 622 828 651">Isosignal au myomètre</p> 	<p data-bbox="1070 622 1365 651">Hyposignal homogène</p> 	<p data-bbox="1582 622 1773 651">Rehaussement</p> 

Imagerie – IRM

	Léiomyome Avec Dégérescence	T1	T2	Post contraste
	Kystique Remaniement liquidien	Isosignal au myomètre	Hypersignal	Sans rehaussement
	Hémorragique/Carnéuse 2 nd obs. des veines de drainage Plus fréquent : Grossesse	Hypersignal en anneau ou centralement	Variable Hyposignal à Hypersignal	Variable
	Lipoléiomyome Graisse macroscopique * Va se supprimer sur les FAT SAT	Signal de la graisse	Signal de la graisse	Variable
	Hyaline Remplacement tissus fibreux et musculaire par du tissu hyalin Volumineux	Isosignal	Hyposignal	Rehaussement diminué par rapport au léiomyome ordinaire
	Myxoïde (rare) Remplacement tissu fibreux par du matériel gélatineux.	Hyposignal	Hypersignal marqué	Rehaussement atypique, septé, peu à très important

IMAGERIE – IRM

Trouvailles atypiques Léiomyome

Hypersignal T1

Hypersignal T2 modérée

Rehaussement hétérogène

Restriction Diffusion

Léiomyosarcome

Utéromégalie importante

Zone centrale:

Irrégulière et hétérogène

Hyposignal T1

Hypersignal T1 non rehaussant

*Nécrose Hémorragique

Hypersignal T2 modéré

Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

IMAGERIE – IRM



Léiomyosarcome

Utéromégalie importante

Zone centrale:

Irrégulière et hétérogène

Hyposignal T1

Hypersignal T1 non rehaussant

*Nécrose Hémorragique

Hypersignal T2 modéré

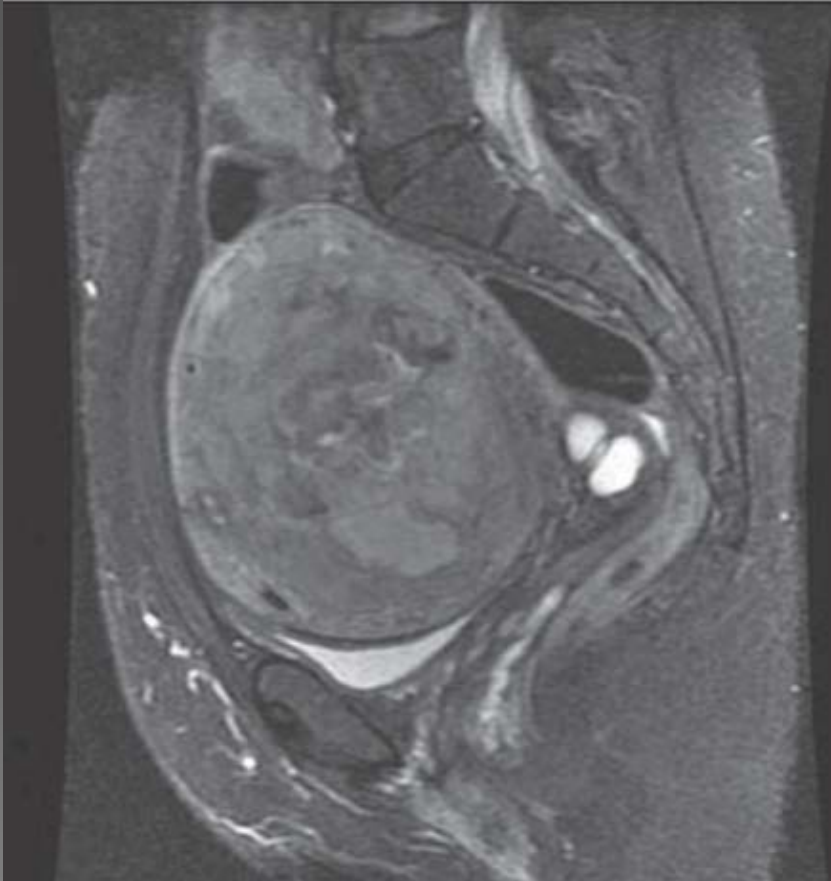
Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

IMAGERIE – IRM



Léiomyosarcome

Utéromégalie importante

Zone centrale:

Irrégulière et hétérogène

Hyposignal T1

Hypersignal T1 non rehaussant

*Nécrose Hémorragique

Hypersignal T2 modéré

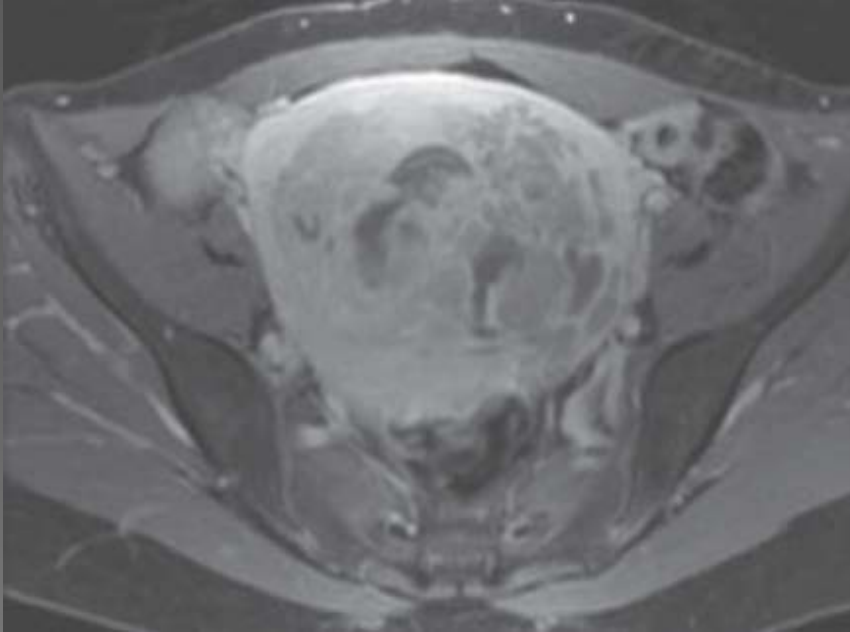
Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

IMAGERIE – IRM



Léiomyosarcome

Utéromégalie importante

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Hypersignal T2 modéré

Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

IMAGERIE – IRM

Trouvailles atypiques Léiomyome

Hypersignal T1

Hypersignal T2 modérée

Rehaussement hétérogène

Restriction Diffusion

Léiomyosarcome

Utéromégalie importante

Zone centrale:

Irrégulière et hétérogène

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Hypersignal T2 modéré

Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

IMAGERIE – IRM

Trouvailles atypiques Léiomyome
<u>Hypersignal</u> T1
<u>Hypersignal</u> T2 modérée
Rehaussement hétérogène
Restriction Diffusion

Léiomyosarcome
<u>Utéromégalie</u> importante
Zone centrale: Irrégulière et hétérogène <u>Hyposignal</u> T1 <u>Hypersignal</u> T1 non rehaussant *Nécrose Hémorragique <u>Hypersignal</u> T2 modéré <u>Hypersignal</u> T2 important *Nécrose
Rehaussement hétérogène
Paroi mal définie et irrégulière

Aucune trouvaille à IRM fiable pour différencier un léiomyome avec dégénérescence d'un léiomyosarcome

Atteinte organes adjacents
ADNP

Métastases: poumon et foie

* Important *

Une augmentation de taille RAPIDE d'un léiomyome
N'EST PAS un indicateur de LMS
chez la FEMME EN ÂGE DE PROCRÉER

Short-term change in growth of uterine leiomyoma: tumor growth spurts

*Donna Day Baird, Ph.D.,^a Tiana A. Garrett, Ph.D., M.P.H.,^d Shannon K. Laughlin, M.D., M.P.H.,^a
Barbara Davis, V.M.D., Ph.D.,^b Richard C. Semelka, M.D.,^c and Shyamal D. Peddada, Ph.D.^c*

^a Epidemiology Branch, ^b Laboratory of Women's Health, and ^c Biostatistics Branch, National Institute of Environmental Health Sciences, Research Triangle Park; ^d Department of Epidemiology and ^e Department of Radiology, University of North Carolina, Chapel Hill, North Carolina

Étude prospective:
Évaluation taille
101 léiomyomes
IRM sur 1 an/3 mois
d'intervalle

* Important *

Obstet Gynecol. 1994 Mar;83(3):414-8.

Uterine sarcoma in patients operated on for presumed leiomyoma and rapidly growing leiomyoma.

Parker WH¹, Fu YS, Berek JS.

SOGC : 6815 patientes Myomectomie et Hystérectomie

- 18 LMS (0.26%)

- Même prévalence pour les léiomyomes à croissance rapide (0.27%)

APRÈS LA MÉNOPAUSE

Toute masse utérine qui augmente doit être évaluée et considérée **SUSPECTE**

* Le taux de suspicion demeure plus faible chez une femme ménopausée, sous œstrogène, connue pour léiomyome

Imagerie - Autres

○ Diffusion

Eur Radiol (2008) 18: 723–730
DOI 10.1007/s00330-007-0787-7

UROGENITAL

Ken Tamai
Takashi Koyama
Tsuneo Saga
Nobuko Morisawa
Koji Fujimoto
Yoshiki Mikami
Kaori Togashi

The utility of diffusion-weighted MR imaging for differentiating uterine sarcomas from benign leiomyomas

Eur Radiol (2009) 19: 2756–2764
DOI 10.1007/s00330-009-1471-x

UROGENITAL

Tomohiro Namimoto
Yasuyuki Yamashita
Kazuo Awai
Takeshi Nakaura
Yumi Yanaga
Toshinori Hirai
Tetsuo Saito
Hidetaka Katabuchi

Combined use of T2-weighted and diffusion-weighted 3-T MR imaging for differentiating uterine sarcomas from benign leiomyomas

○ TDM

- > Non recommandé
- > Découverte fortuite

○ Médecine Nucléaire

- > Captation très variable
- > Léiomyome
 - Faible à importante
- > Léiomyosarcome
 - Importante

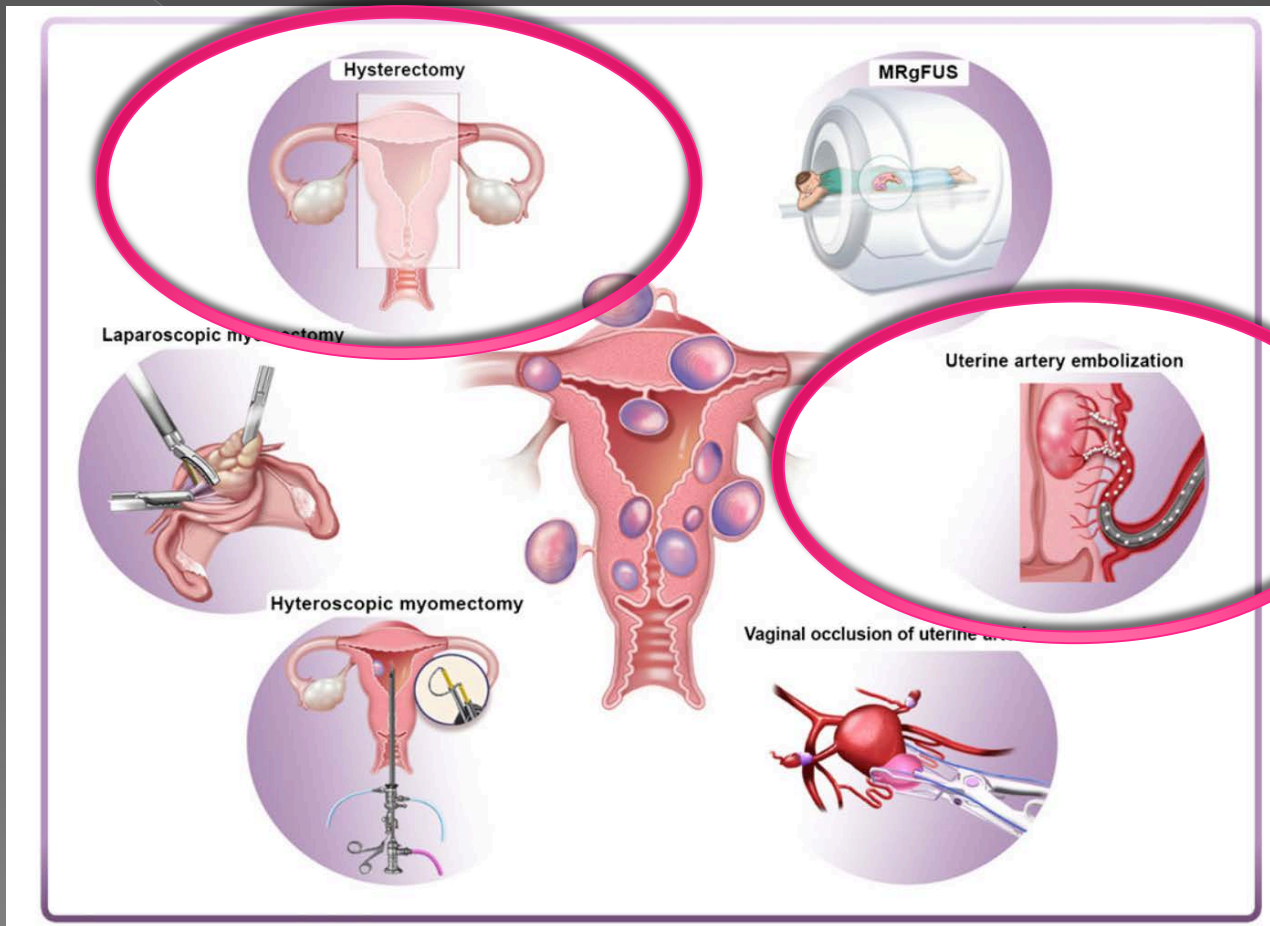
Table 1

Efficacy of preoperative diagnostics in uterine leiomyosarcoma.

Method	Sub-method	Sensitivity/specificity	N	Citation
Endometrial sampling	D&C, EMB	86%/67%	72	Bansal et al. [17]
	EMB	52%/35%	68	Hinchcliff et al. [20]
MRI	Contrast-enhanced	94%/96%	8	Lin et al. [19]
		100%/93%	10	Goto et al. [21]
PET		100%/NR	5	Umesaki et al. [22]

Legend: D&C = dilation and curettage; EMB = endometrial biopsy; MRI = magnetic resonance imaging; PET = positron emission tomography.

Traitements disponibles



Hystérectomie

Hystérectomie : Complications majeures

Taux de mortalité : 0.6 à 1.6/1000 procédures

Complications secondaires à l'anesthésie

Complications pendant la Chirurgie

- Saignement
- Gastrointestinales (rectum) : 1%
- Génitourinaires (uretère, vessie) : 2 %
- Neuropathie : 2%

Complications Post-Chirurgie

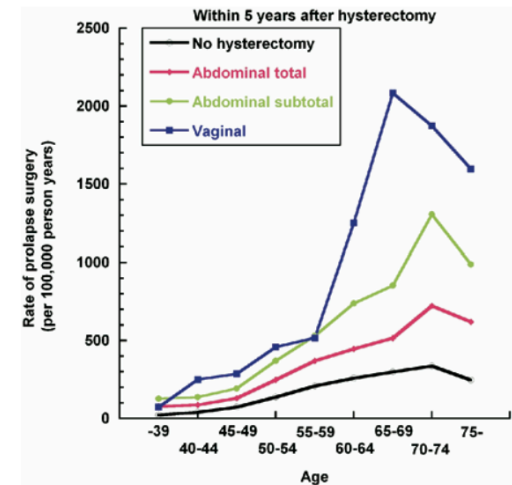
- Infections : 13%
- TPP et PE : 12%

Complications à long terme

- Génitourinaires
- Prolapsus vaginal
- Ménopause
- Dépression/Diminution de la libido

FIGURE 1

Age specific rates of prolapse surgery within five years of hysterectomy



EAU : Complications mineures

Douleurs prolongées

- Hospitalisation > 48h < 1 %

Aménorrhée

- < 45 ans : 0-3 %

- > 45 ans : 15 %

Septicémie : 1 à 3%

TPP et PE : 0.25%

SOGC

« For most women with presumed uterine leiomyomas, whether **asymptomatic or symptomatic**, we recommend **NOT** performing hysterectomy for the sole purpose of excluding malignant neoplasm (**Grade 1B**). Nonetheless, the risk of a complication of hysterectomy exceeds the risk of finding an undiagnosed malignant neoplasm »

Embolisation des artères utérines

- Plusieurs études randomisées : **efficace et sécuritaire**
 - > Embolization versus hysterectomy (EMMY) trial
 - > The Randomized Trial of Embolization versus Surgical Treatment for fibroids (REST) Trial
 - > The FIBROID Registre : SIR
 - > The Ontario Uterine Fibroid Embolization Trial : Part 1 et 2
- La plupart des études
 - > **Diminution** du temps d'hospitalisation
 - > Retour aux habitudes de vie **plus rapidement**
 - > **Diminution**
 - Léiomyome : 50 à 60%
 - Utérus : 40 à 50%
 - > Résultats semblables à la myomectomie
 - Satisfaction : **90%** des patientes
 - Amélioration des Sx : **85 à 90%** des patientes
 - Taux de réintervention à 5 ans : **20 à 30%**

Pré-Procédure : Évaluation

- Âge
- ATCD médicaux et chirurgicaux
- Symptômes : Fertilité
- Examen physique
- Imagerie : **IRM**
 - Identifier les patientes pour qui
 - EAU ne serait pas le traitement optimal
 - À risque d'expulsion vaginale

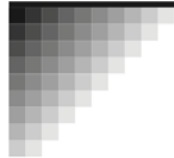
Contre indication absolue

Grossesse actuelle

Infection gynécologique active

Néoplasie gynécologique : prouvée ou suspectée

IRM Pré-Procédure



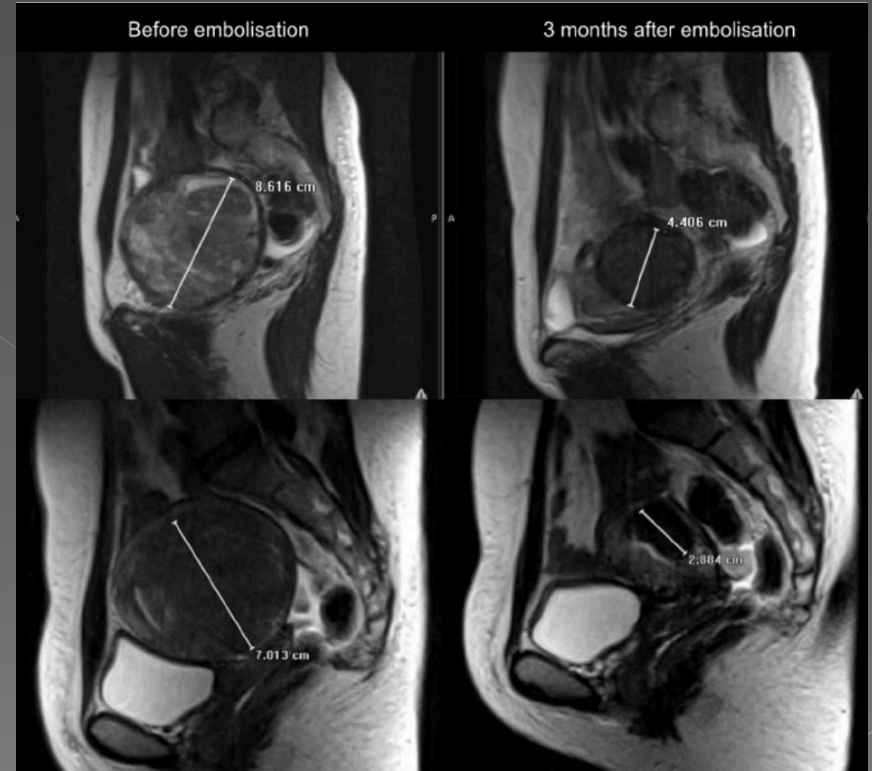
Role of MR Imaging of Uterine Leiomyomas before and after Embolization¹

Features That Should Be Reported in Cases of Uterine Leiomyoma

Feature	Description
Size of uterus	Maximal dimensions including the cervix
Number of leiomyomas	Rough estimate of the number of leiomyomas
Location of each leiomyoma	Intracavitary, submucosal, intramural, subserosal, or exophytic
Size of leiomyomas	Maximal dimensions of the three largest index lesions
Size of stalk if pedunculated	Size of the base of the stalk
Extent of interface if submucosal	Size of the submucosal interface
Enhancement characteristics	Percentage of the leiomyoma that enhances
Presence of adenomyosis	Thickness of the inner myometrium and presence of ectopic endometrial glands
Presence of ovarian vessel parasitization, adnexal masses, or endometrial abnormalities	...

IRM Post-Procédure

- Infarctus du léiomyome
 - > **Diminue de taille**
 - > **Avasculaire**
 - > Hypersignal T1
 - > Signal variable T2
 - Infarctus hémorragique
 - Liquéfaction progressive
 - > Calcifications
 - Après 6 mois
- Si asymptomatique
 - > Pas de suivi nécessaire



IRM Post-Procédure

- Indications :
 - > Caractéristiques atypiques Pré-Procédure
 - > Persistance ou augmentation des sx
 - Rehaussement post contraste
 - > Éliminer une progression
 - Augmentation de taille
 - Léiomyosarcome : embolisation non efficace
 - Patiente ménopausée

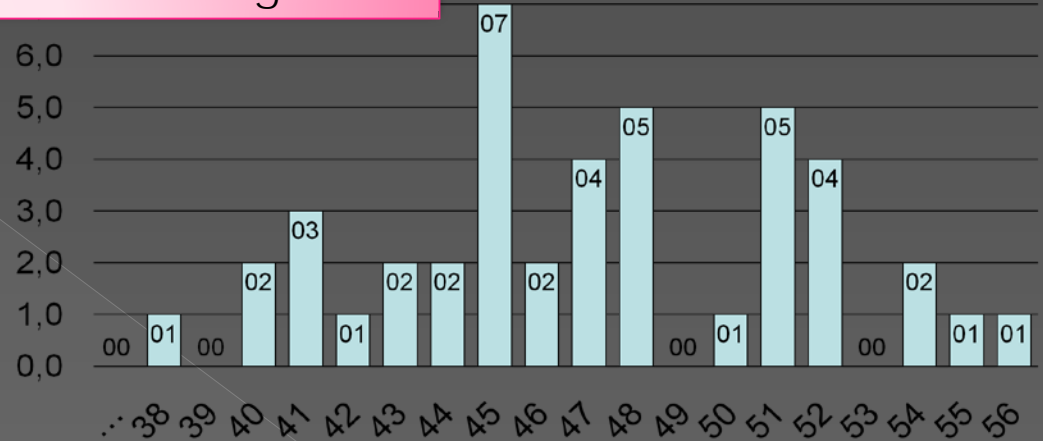
Post uterine fibroid embolization MRI imaging beyond 6 months: does it change management?

A. Fetz¹, R. Zener², E. Zhang², D. Wiseman²,
A. Mujoomdar²; ¹Schulich School of Medicine and
Dentistry, Western University, London, ON; ²London
Health Sciences Center, London, ON

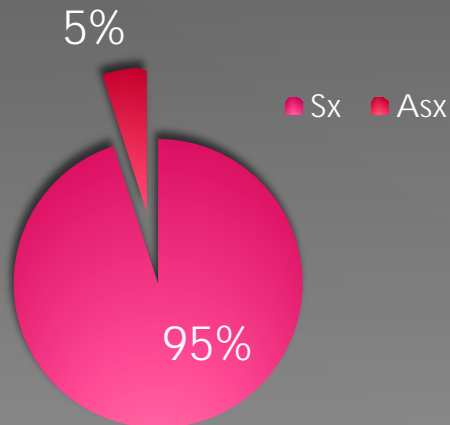
Diminution de volume :
Se produit dans les 6 premiers mois
89.5% des léiomyomes
De 6 à 12 mois :
Diminution du volume de 5.2%
Aucune augmentation observée IRM de 12 mois

Dans notre milieu...

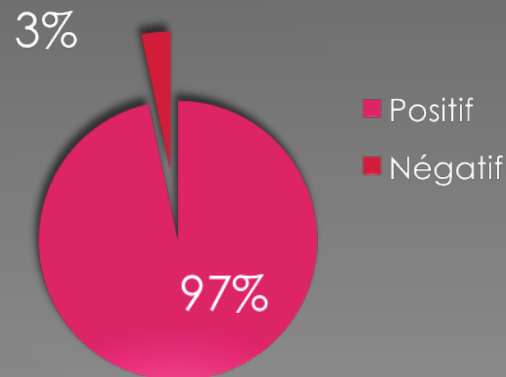
Nombre de patientes en fonction de l'âge



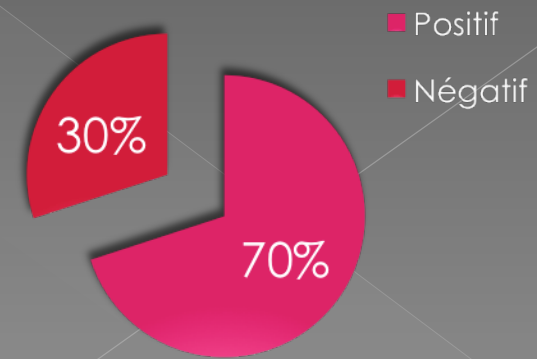
Sx vs Asx



Ménorragie

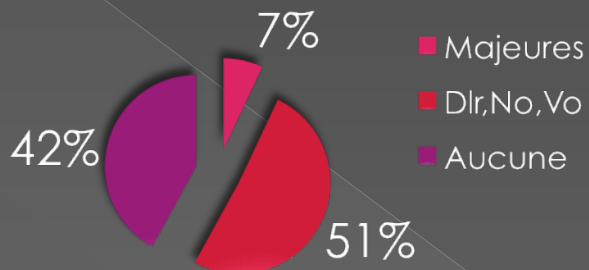


Douleur

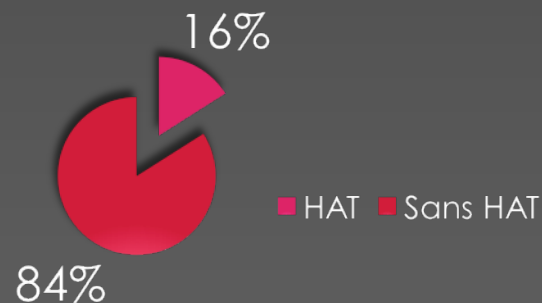


Dans notre milieu...

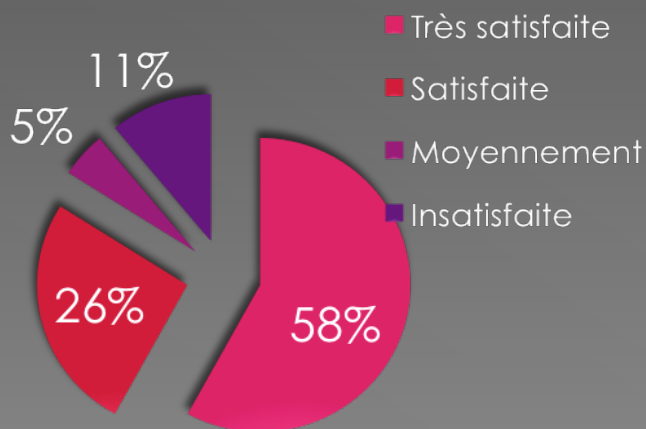
Complications



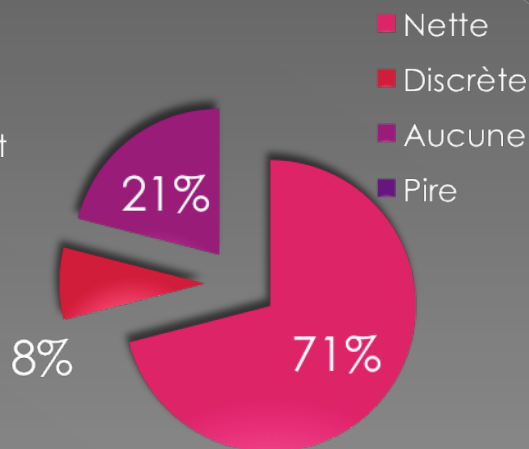
HAT



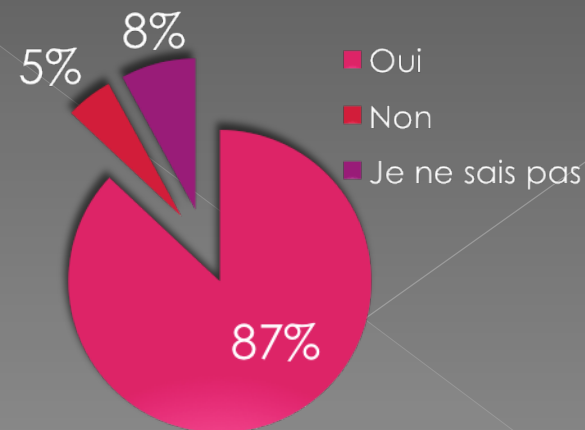
Satisfaction



Amélioration



Recommandation



Conclusion

- L'embolisation des artères utérines
 - > Technique efficace et sécuritaire
 - Sous représentée à Sherbrooke secondaire à un problème de recrutement
- Patientes intéressées
 - > Évaluation
 - > IRM : léiomyome vs LMS
- 2 critères indicateurs
 - > Extension locorégionale
 - > Croissance femme ménopausée
- Pas d'autres critères fiables
 - > Clinique
 - > Biochimie
 - > Imagerie

Léiomyosarcome

Utéromégalie importante

Zone centrale:

Irrégulière et hétérogène

Hyposignal T1

Hypersignal T1 non rehaussant

*Nécrose Hémorragique

Hypersignal T2 modéré

Hypersignal T2 important

*Nécrose

Rehaussement hétérogène

Paroi mal définie et irrégulière

Conclusion

GYNÉCOLOGUE



RADIOLOGISTE
D'INTERVENTION



RADIOLOGISTE

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Questions ???