

Séminaire Echo-Doppler Transcrânien Lille - Février 2018

Echo-Doppler Transcrânien Détection Embolique



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Détection embolique

- Recherche emboles / HITS
 - Plaque carotidienne instable
 - Plaques de la crosse aortique
 - Thrombus du VG ...
- Recherche de FOP:
 - AVC ischémique à bilan causal négatif
 - Bilan avant chirurgie en position assise

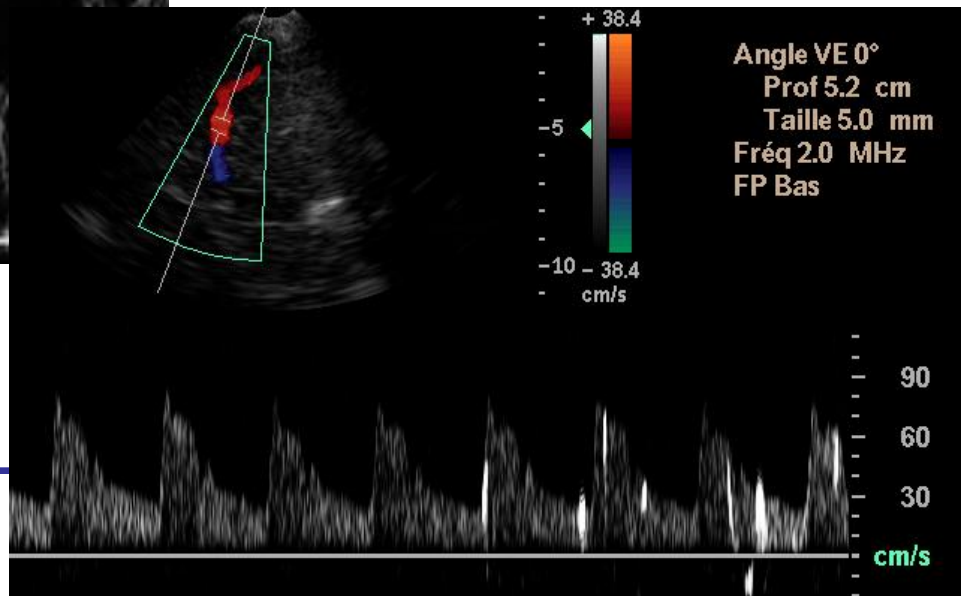
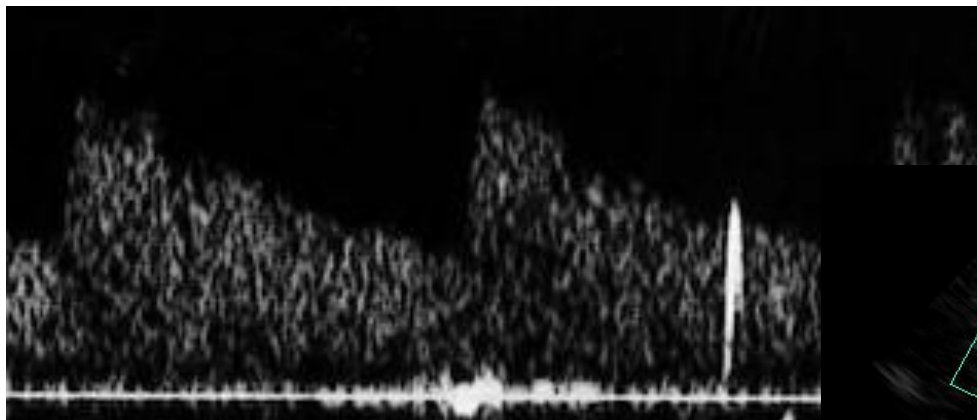
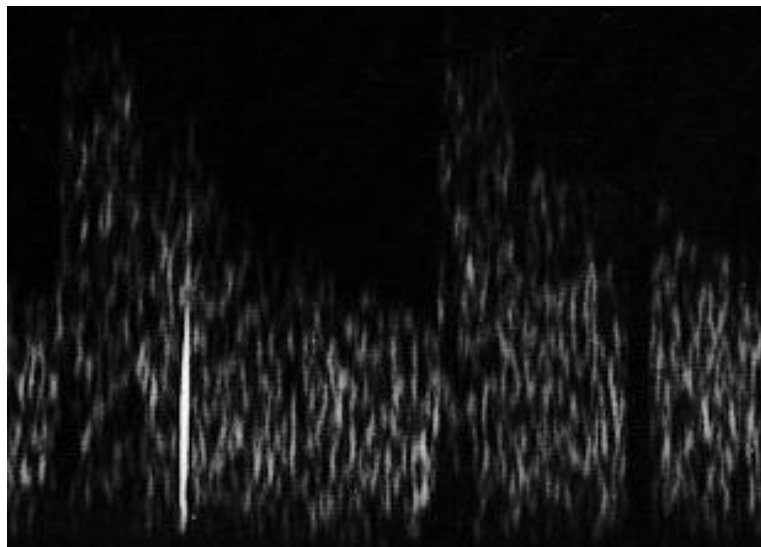
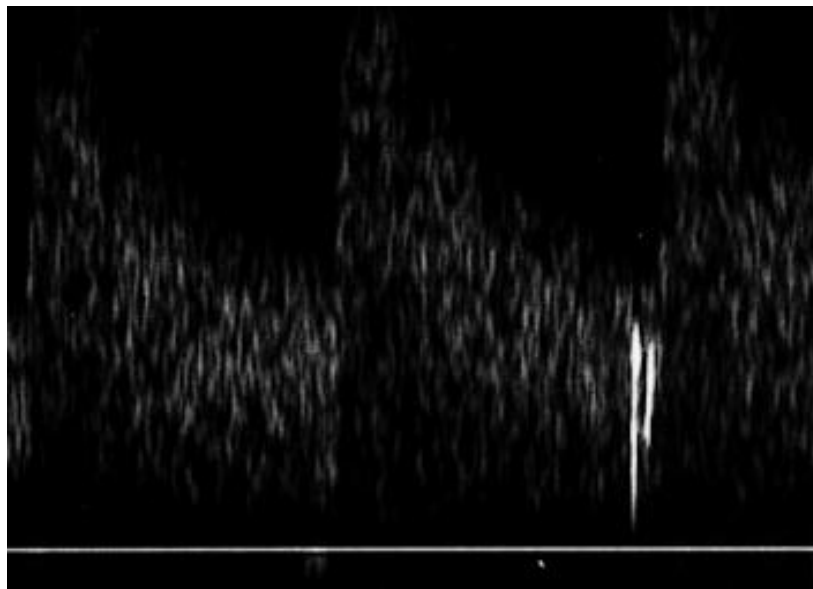


Caractéristiques du signal

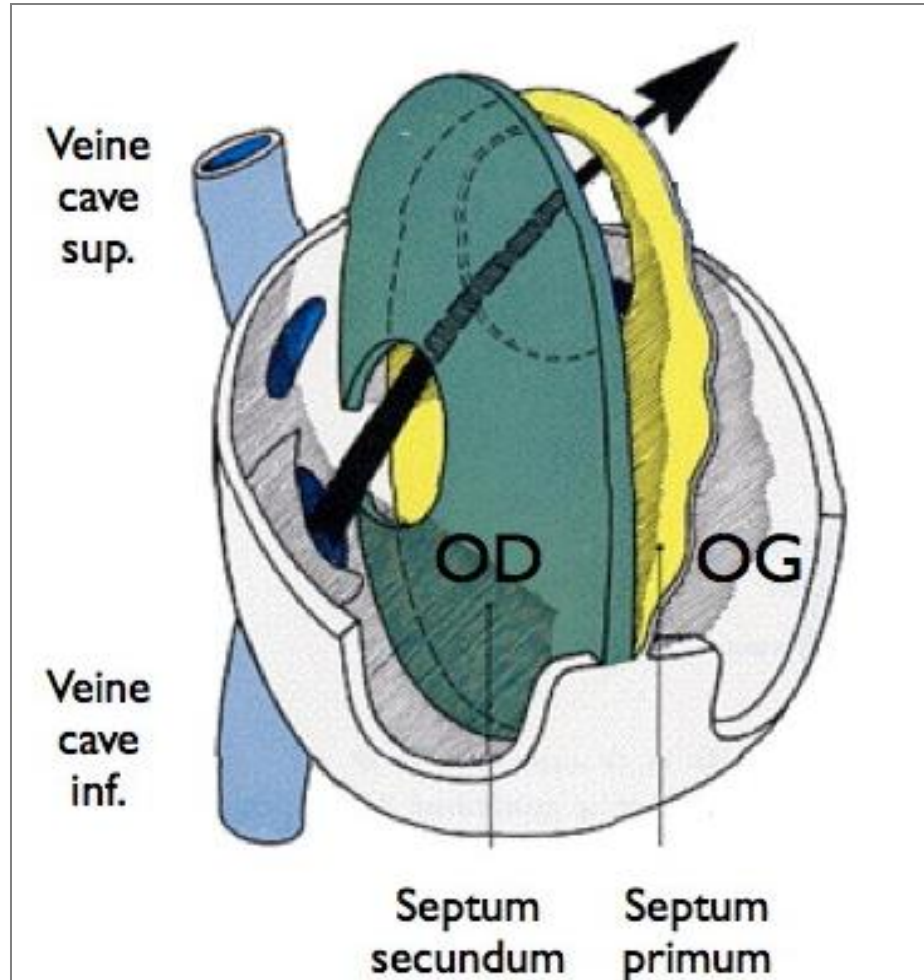
- Intensité élevée (HI.S)
 - entre 3 et 10 dB > signal de fond
- Signal bref
 - de 10 à 100 ms (.. TS)
- Unidirectionnel dans le spectre
- Répartition aléatoire dans le cycle
- Nombre variable (étiologie +++)
- Particularités sonores

HITS





Foramen Ovale: anatomie



Recherche du FOP: méthodologie

- Utilisation d'un contraste ne passant pas la barrière pulmonaire
- Procédure standard *Conférence de consensus*
 - Position allongée du patient
 - Abord veine cubitale (18 G)
 - Sérum salé iso 9ml + air 1ml +/- sang **agité**
 - Injection en bolus

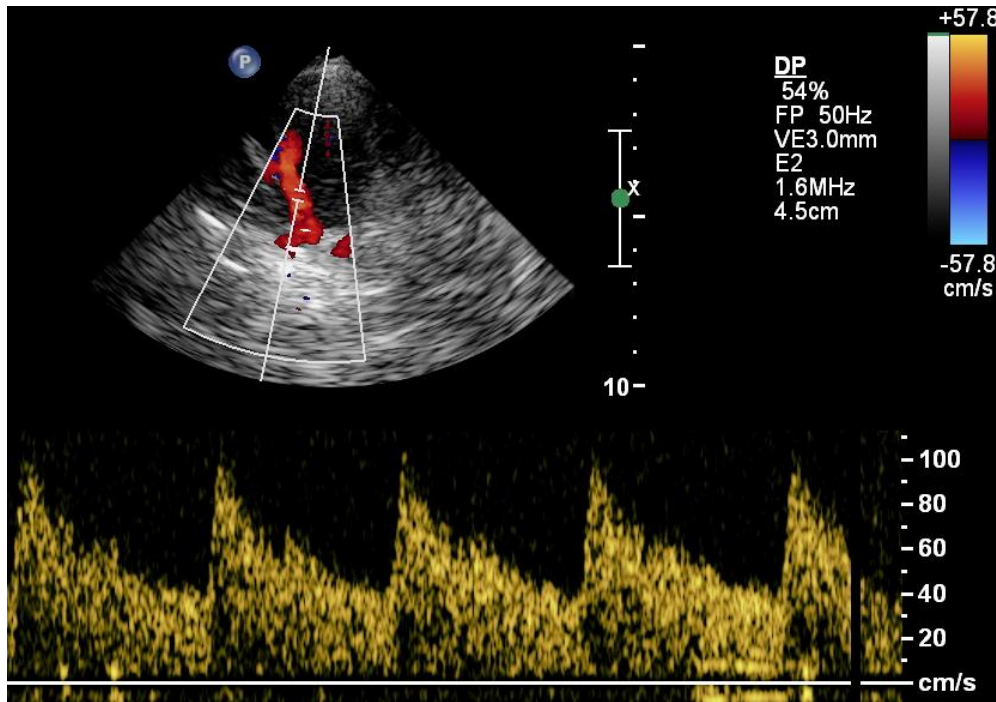
in Cerebrovasc Dis 2000; 10(6): 490-496



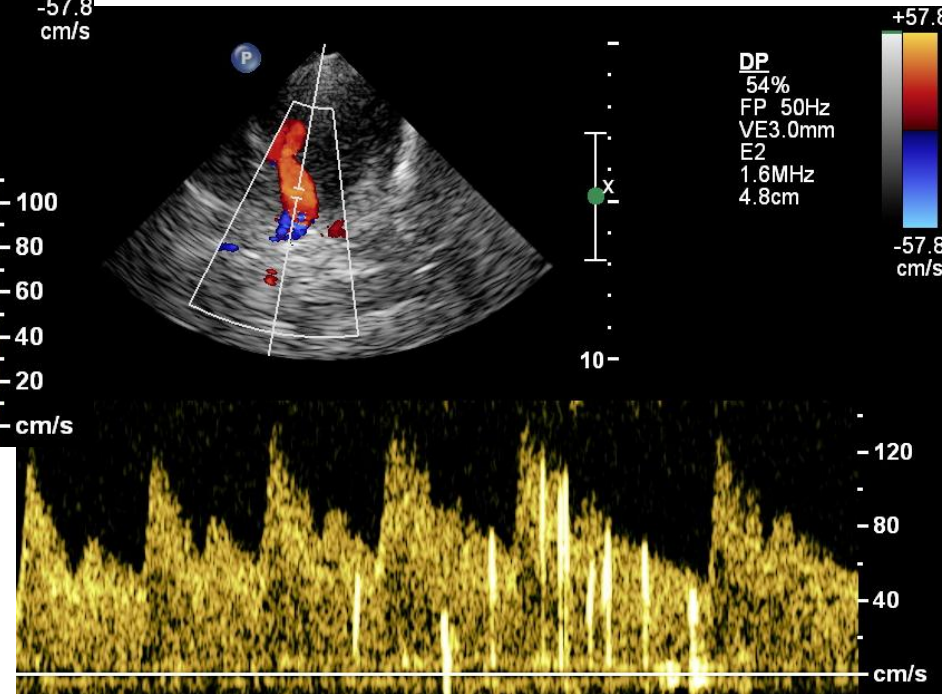
Recherche du FOP: méthodologie

- Enregistrement 1 ACM ou les 2 ACM
 - 0 MB: pas de shunt
 - 1-10 MB: shunt minime
 - > 10 MB: shunt important
 - Shunt massif: pas de comptage possible (« curtain »)
- Si peu ou pas de MB: Manœuvre de Valsalva
 - Injection du contraste: 5 sec. avant
 - Durée de la manœuvre: 10 sec.
 - Description à l'identique des résultats



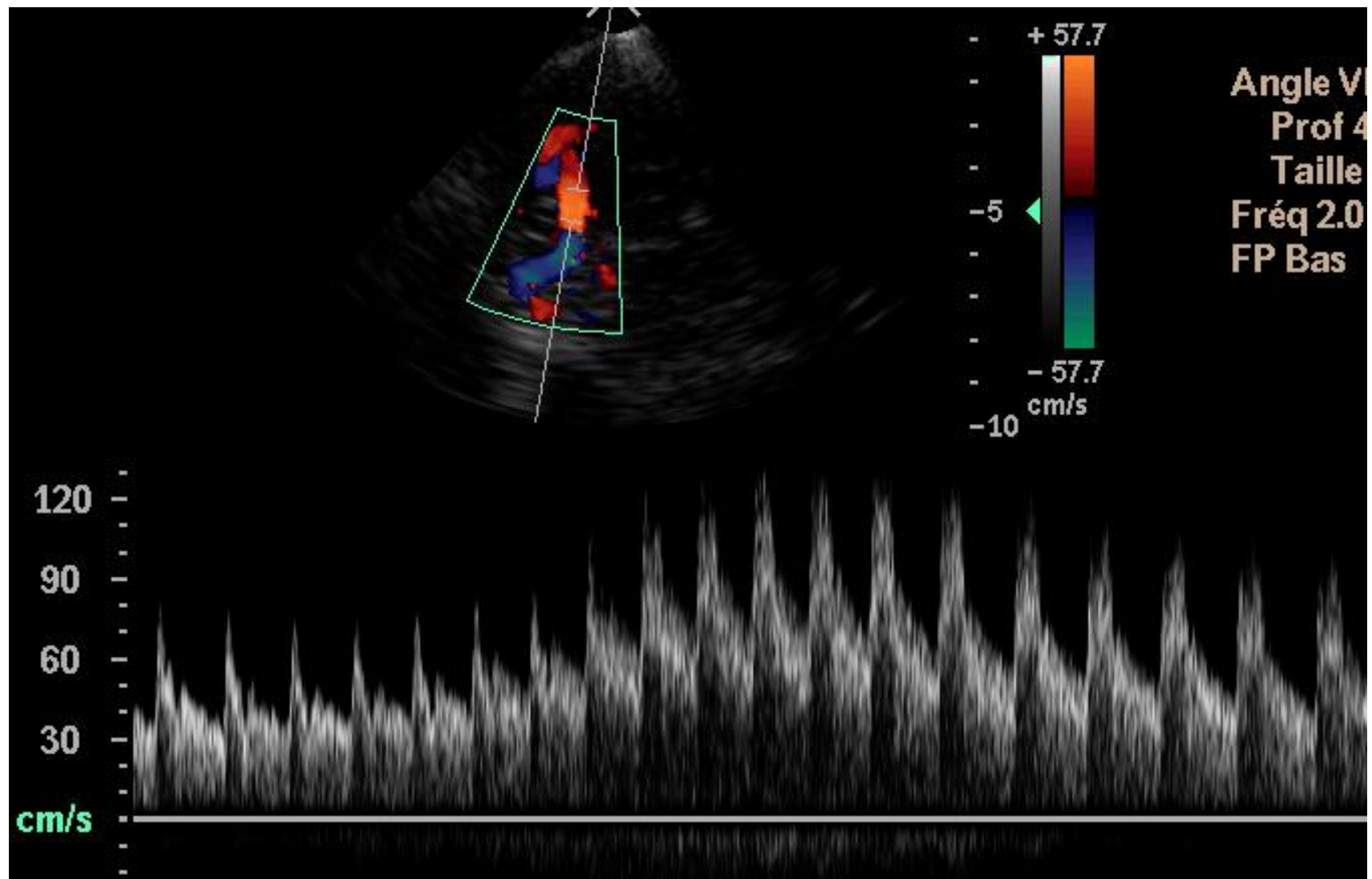


Repos: absence de HITS pendant l'injection IV des microbulles



Même patient, même incidence, nombreux HITS au cours du Valsalva



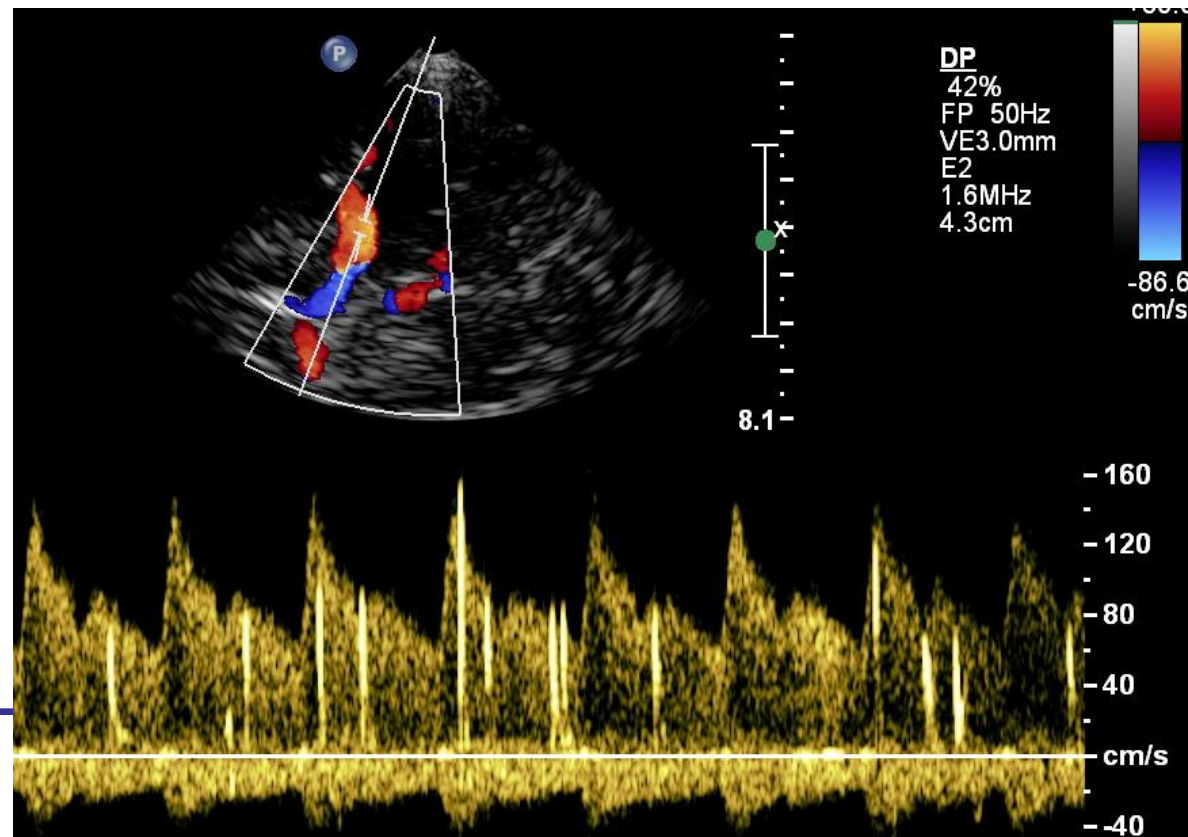


Valsalva d'excellente qualité et négatif



Intérêt de l'EDTC

- Technique facile à appliquer, rapide, pour le diagnostic positif d'un shunt D-G quelle que soit sa localisation
- Excellente VPN



Foramen Ovale: ETO



FOP - ASIA: passage massif de microbulles



Foramen Ovale: ETO Embolie Paradoxe



Comparaisons EDTC / ETO

- Performances de l'EDTC
 - Sens 95%, Spéc 88%, VPN 97% *Stendel 2000*
 - Concordance quasi parfaite en termes de classification si 2 Valsalva *40 FOP/110 pts Belvis 2006*



Comparaisons EDTC / ETO

- Performances de l'EDTC
 - Sens 95%, Spéc 88%, VPN 97% *Stendel 2000*
 - Concordance quasi parfaite en termes de classification si 2 Valsalva *40 FOP/110 pts Belvis 2006*
- EDTC
 - Plus agréable pour le patient
 - Manœuvre de Valsalva plus facile et plus efficace
détection EDTC > ETO *Devuyst 1997*
 - Mais informations limitées, ne remplace pas ETO / bilan causal d'un accident ischémique cérébral !!



Limites de l'EDTC

- Absence de fenêtre temporelle: abord occipital
 - Sens 85%, spéc 100%, VPN 100%
Seulement si utilisation du Valsalva
(sens 100% si on élimine les petits shunts)
 - Délai d'apparition: AB=7 sec., MCA= 4.5 sec. *Del Sette 2007*



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- Absence de fenêtre temporelle: abord occipital
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 - (sens 100% si on élimine les petits shunts)*
 - Délai d'apparition: AB=7 sec., MCA= 4.5 sec. *Del Sette 2007*
- Diagnostic positif du shunt mais aucune information
 - sur sa localisation
 - sur les anomalies cardiaques associées



Impact clinique du FOP

- Importance du shunt
 - Nombre de MB, seule variable prédictive du risque de récurrence de l'AIC en EDTC
 - valeur seuil: 10 MB *Anzola 2003*
- Intérêt de la recherche en dehors des AIC
 - Plongeurs: FOP x 2 à 4 le risque d'anomalies de décompression
 - Hypoxie réfractaire
 - Bilan pré opératoire de la chirurgie en position assise



Long-Term Outcomes of Patent Foramen Ovale Closure or Medical Therapy after Stroke

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ABSTRACT

BACKGROUND

Whether closure of a patent foramen ovale reduces the risk of recurrence of ischemic stroke in patients who have had a cryptogenic ischemic stroke is unknown.

METHODS

In a multicenter, randomized, open-label trial, with blinded adjudication of end-point events, we randomly assigned patients 18 to 60 years of age who had a patent foramen ovale (PFO) and had had a cryptogenic ischemic stroke to undergo closure of the PFO (PFO closure group) or to receive medical therapy alone (aspirin, warfarin, clopidogrel, or aspirin combined with extended-release dipyridamole; medical-therapy group). The primary efficacy end point was a composite of recurrent nonfatal ischemic stroke, fatal ischemic stroke, or early death after randomization. The results of the analysis of the primary outcome from the original trial period have been reported previously; the current analysis of data from the extended follow-up period was considered to be exploratory.

RESULTS

We enrolled 980 patients (mean age, 45.9 years) at 69 sites. Patients were followed for a median of 5.9 years. Treatment exposure in the two groups was unequal (3141 patient-years in the PFO closure group vs. 2669 patient-years in the medical-therapy group), owing to a higher dropout rate in the medical-therapy group. In the intention-to-treat population, recurrent ischemic stroke occurred in 18 patients in the PFO closure group and in 28 patients in the medical-therapy group, resulting in rates of 0.58 events per 100 patient-years and 1.07 events per 100 patient-years, respectively (hazard ratio with PFO closure vs. medical therapy, 0.55; 95% confidence interval [CI], 0.31 to 0.999; $P=0.046$ by the log-rank test). Recurrent ischemic stroke of undetermined cause occurred in 10 patients in the PFO closure group and in 23 patients in the medical-therapy group (hazard ratio, 0.38; 95% CI, 0.18 to 0.79; $P=0.007$). Venous thromboembolism (which comprised events of pulmonary embolism and deep-vein thrombosis) was more common in the PFO closure group than in the medical-therapy group.

CONCLUSIONS

Among adults who had had a cryptogenic ischemic stroke, closure of a PFO was associated with a lower rate of recurrent ischemic strokes than medical therapy alone during extended follow-up. (Funded by St. Jude Medical; RESPECT Clinical-Trials.gov number, NCT00465270.)

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*A complete list of investigators in the Randomized Evaluation of Recurrent Stroke Comparing PFO Closure to Established Current Standard of Care Treatment (RESPECT) trial is provided in the Supplementary Appendix, available at NEJM.org.

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Fermer les FOP larges et les FOP + ASIA



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