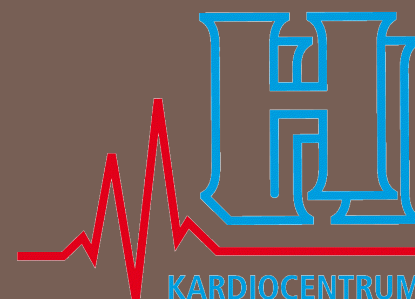


NORMÁLNÍ A ABNORMÁLNÍ SKIASKOPICKÉ NÁLEZY MECHANICKÝCH PROTÉZ

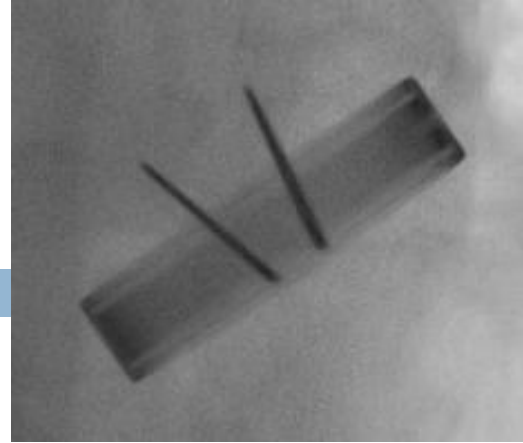
KAREL KOPŘIVA

*KARDIOCENTRUM
NEMOCNICE NA HOMOLCE
PRAHA*

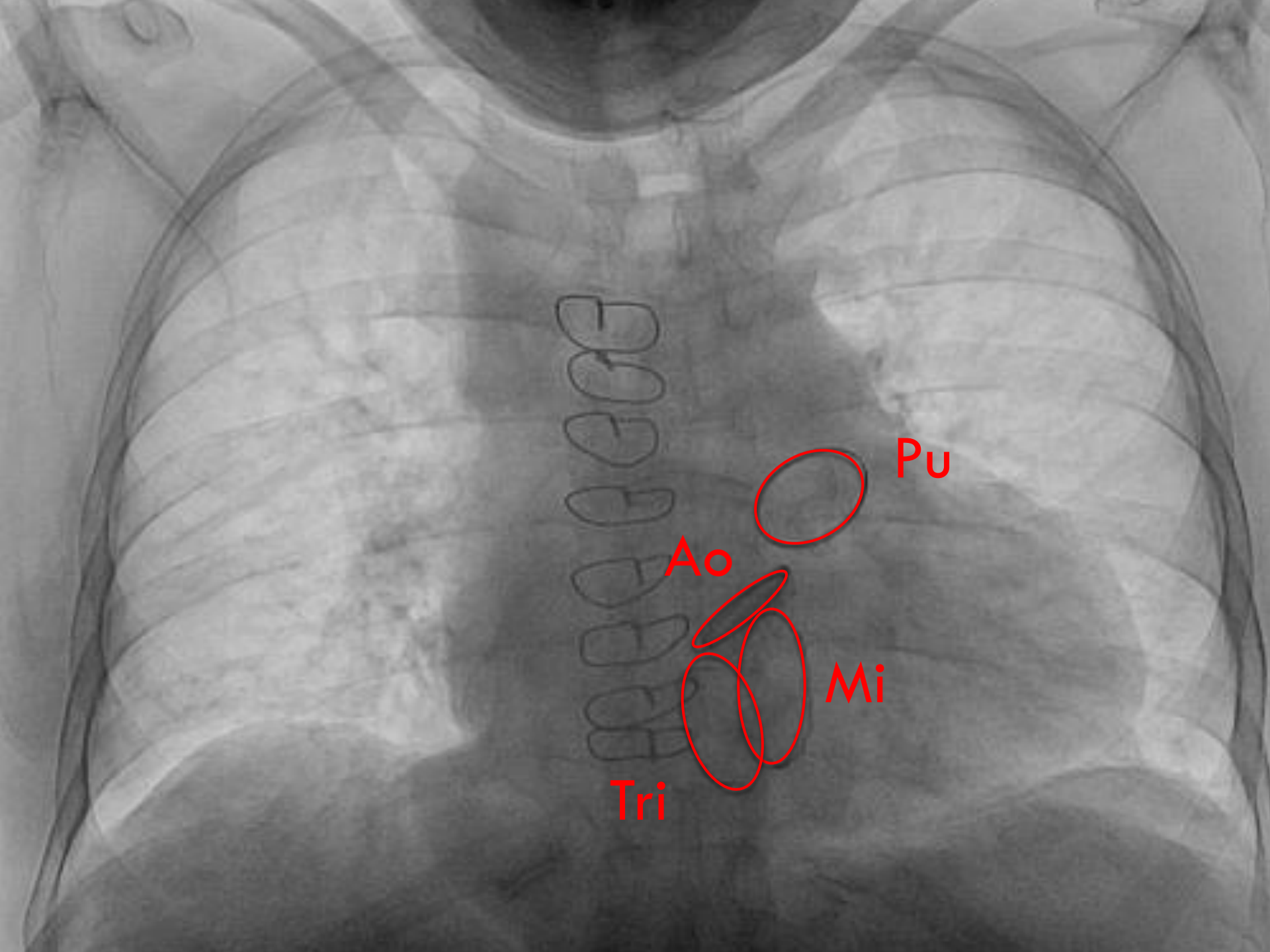


**XXVI. Výroční sjezd České kardiologické společnosti
Brno 8.5.2018**

Skioskopie MPV



- Skioskopie – dynamické RTG zobrazení mechanické protézy (MPV)
- Katetrizační sál, poloha vleže
- Lokalizace MPV, identifikace roviny kolmé na prstenec i na disky
- Hodnocení pohybu disků, stanovení tzv. otevíracího (OA) a uzavíracího úhlu (CA)

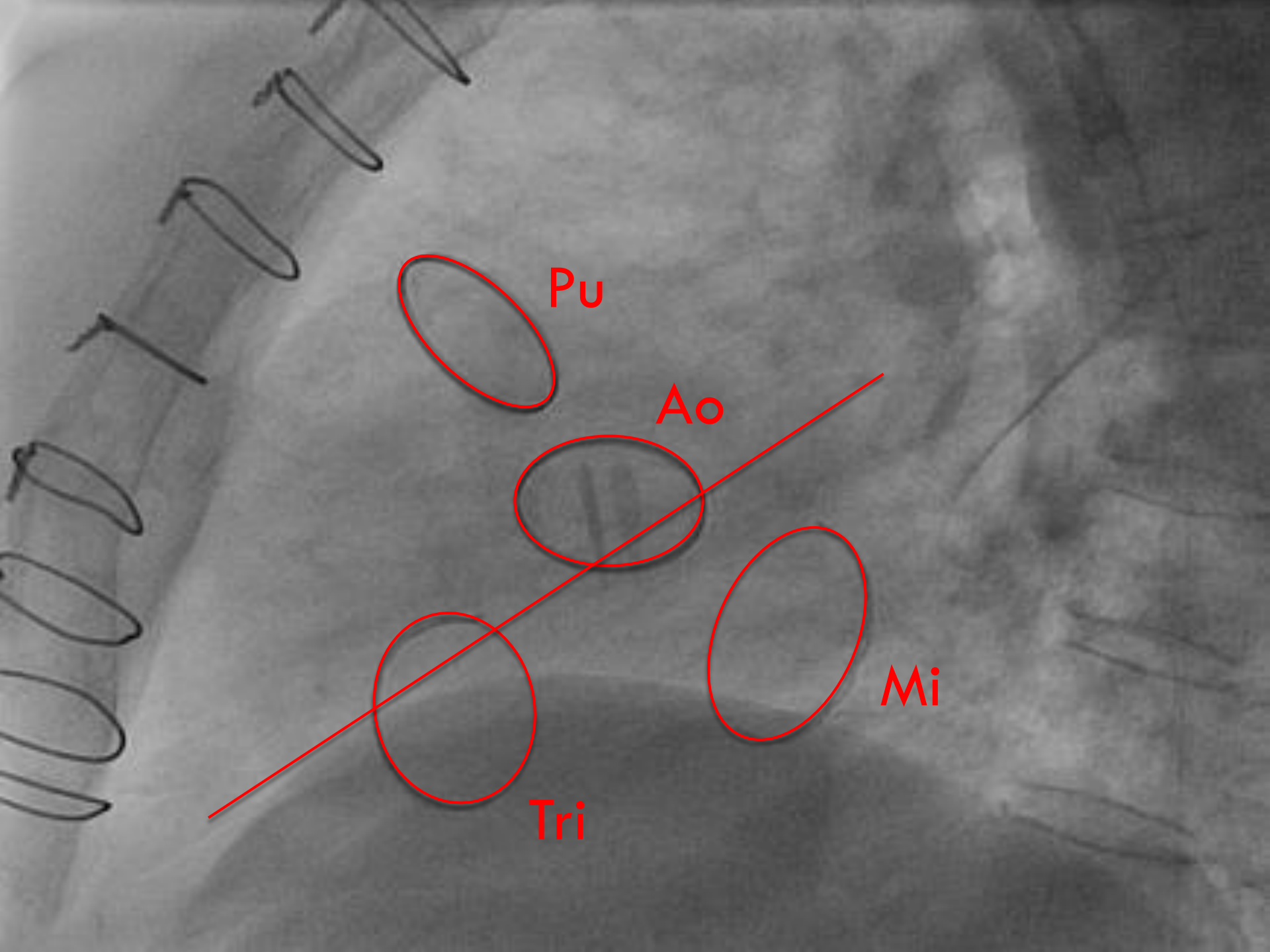


Tri

Ao

Mi

Pu



Pu

Ao

Mi

Tri

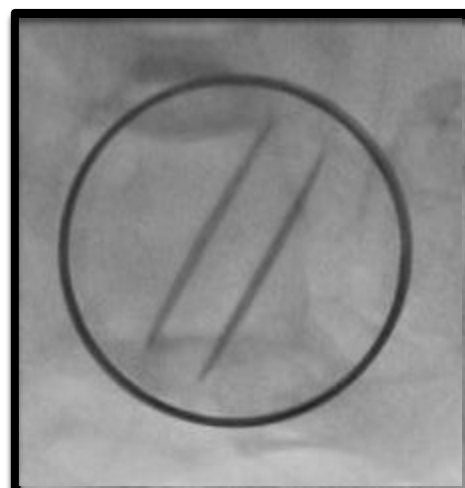
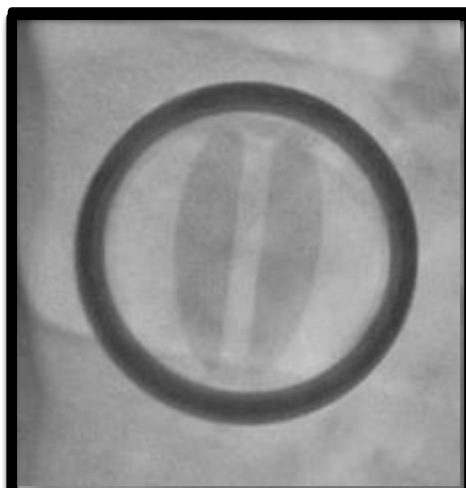
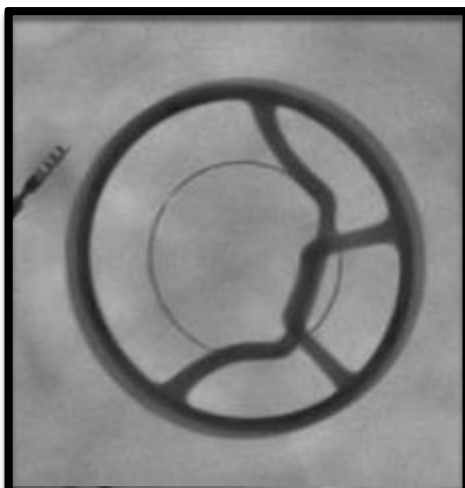
Identifikace typu MPV dle skiaskopie

Allcarbon Sorin

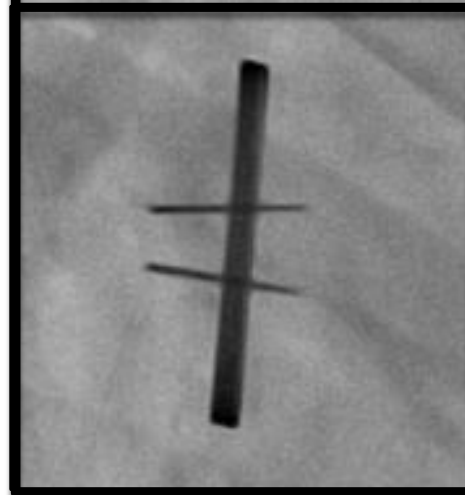
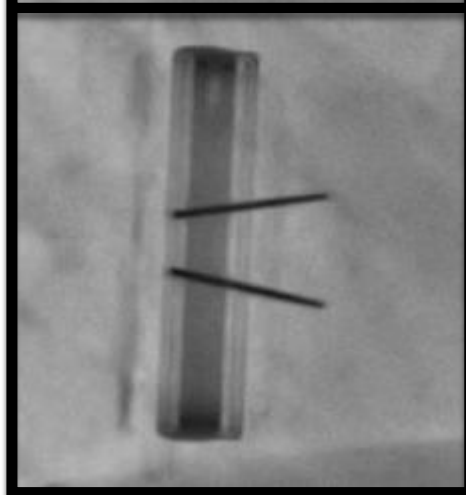
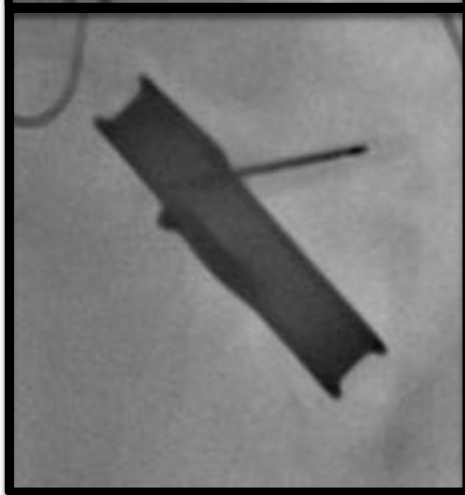
Carbomedics

St. Jude Medical

En face



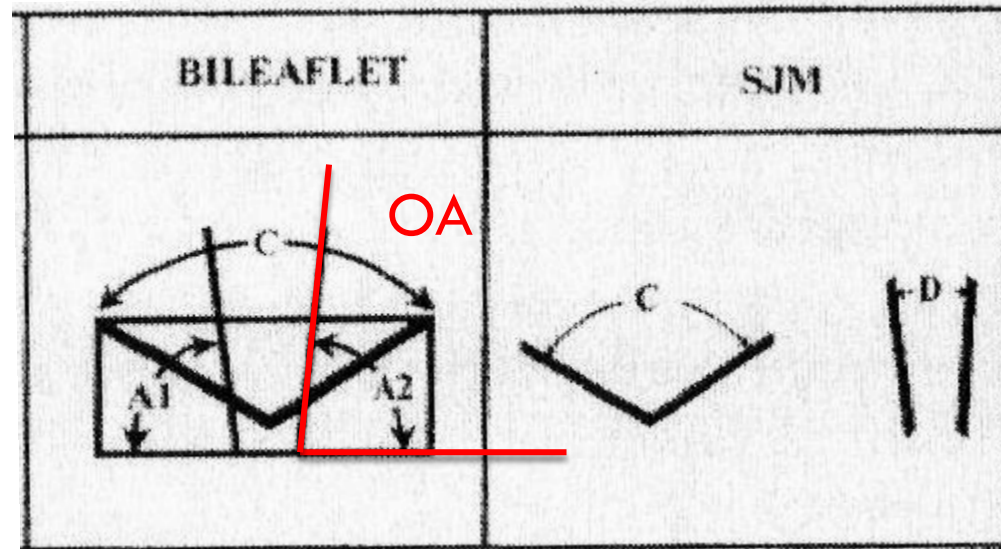
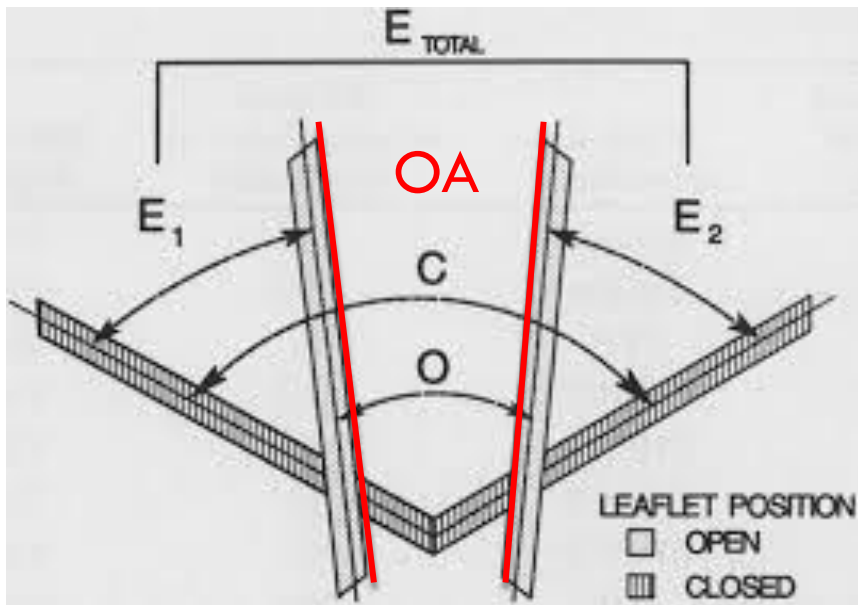
Profil



Otevírací (OA) a uzavírací úhel (CA)

Valve manufacturer	Valve type	Leaflet opening angle (degrees) [‡]	Leaflet closing angle (degrees) [‡]	Normal Doppler echocardiographic peak gradient (mmHg) [§]	Normal Doppler echocardiographic mean gradient (mmHg)
ATS Open Pivot® (Medtronic ATS Medical, Minneapolis, MN, USA) ^{81,82}	Bileaflet	85	25	11.0–47.7	8.0–27.0 [§]
Carbomedics® (Sorin Group USA Inc., Arvada, CO, USA) ^{83–89}	Bileaflet	78	25	12.5–33.4	5.8–20.1 [§]
Duromedics (Baxter Healthcare Corp, Santa Ana, CA, USA) ^{90–92}	Bileaflet	78	20	13.0–22.5	3.4–9.0 [§]
On-X® (On-X Life Technologies Inc., Austin, TX, USA) ⁹³	Bileaflet	90	40	11.4–21.3	5.6–11.8 [§]
Sorin® Bicarbon (Sorin Biomedica Cardio, Milan, Italy) ^{94–96}	Bileaflet	80	20	9.0–29.5	5.0–16.3
St Jude Medical® (St Jude Medical, St Paul, MN, USA) ^{96–107}	Bileaflet	85 (19–25mm) 85 (27–31mm)	30 (19–25mm) 25 (27–31mm)	16.0–35.2	9.9–19.0 [§]
Björk-Shiley spherical (Shiley Inc.; Irvine, CA, USA) ^{99,108,109}	Tilting disc	60	0	19.4–38.9	10.7–21.8 [§]
Medtronic® Hall (Medtronic, Minneapolis, MN, USA) ^{91,98,110–113}	Tilting disc	75	0	17.1–34.4	8.7–17.1 [§]
Omniscience (Medical Inc, St Paul, MN, USA) ¹¹²	Tilting disc	60	0	39.8–50.8	20.1–28.2 [§]
Sorin® Allcarbon (Sorin Biomedica Cardio, Milan, Italy) ^{113,114}	Tilting disc	60	0	13.0–44.0	8.0–29.0 [§]

Skiaskopie mechanických protéz

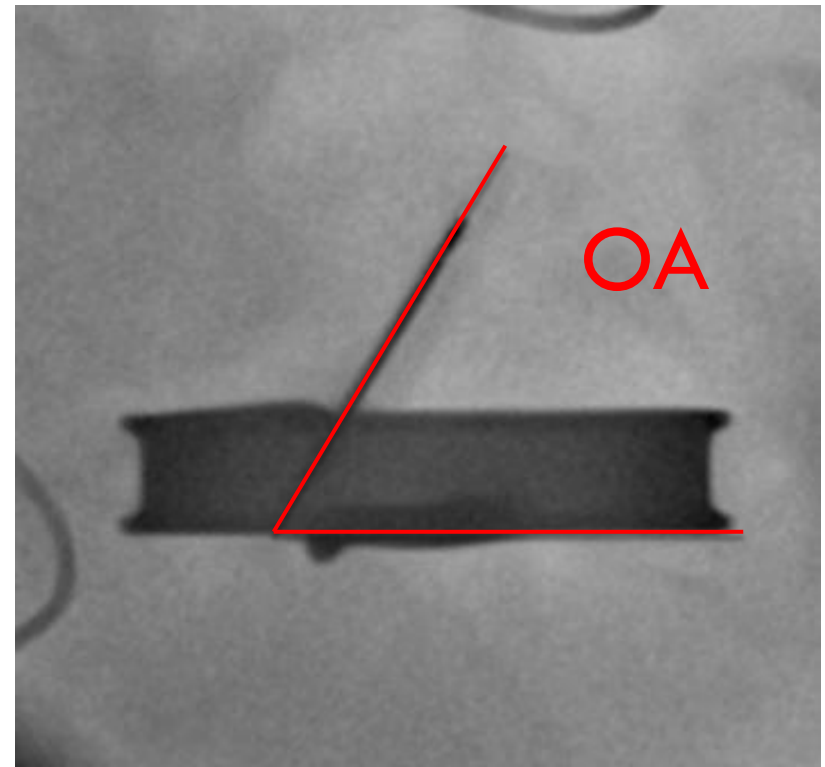
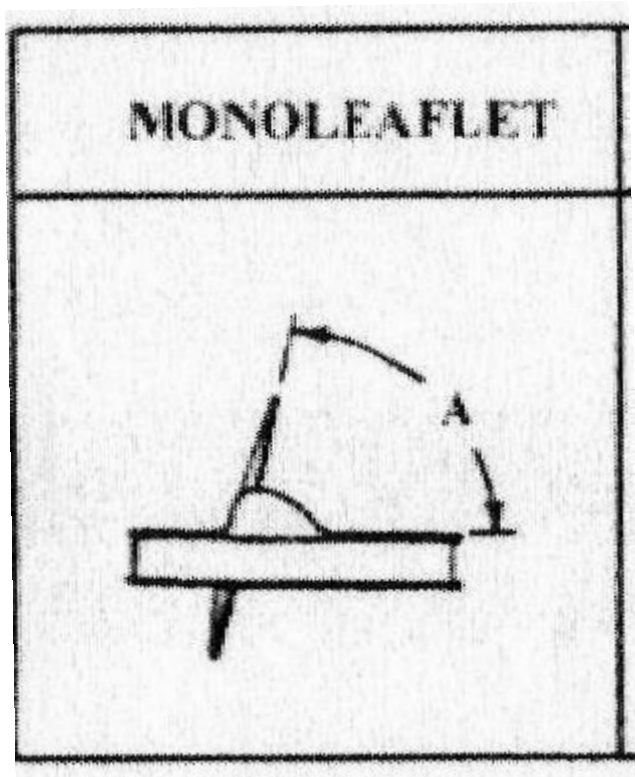


The opening angle (O), closing angle (C), The excursion of each leaflet (E_1 , E_2), and the total leaflet excursion (E_{total})

$$OA = (A_1 + A_2) / 2$$

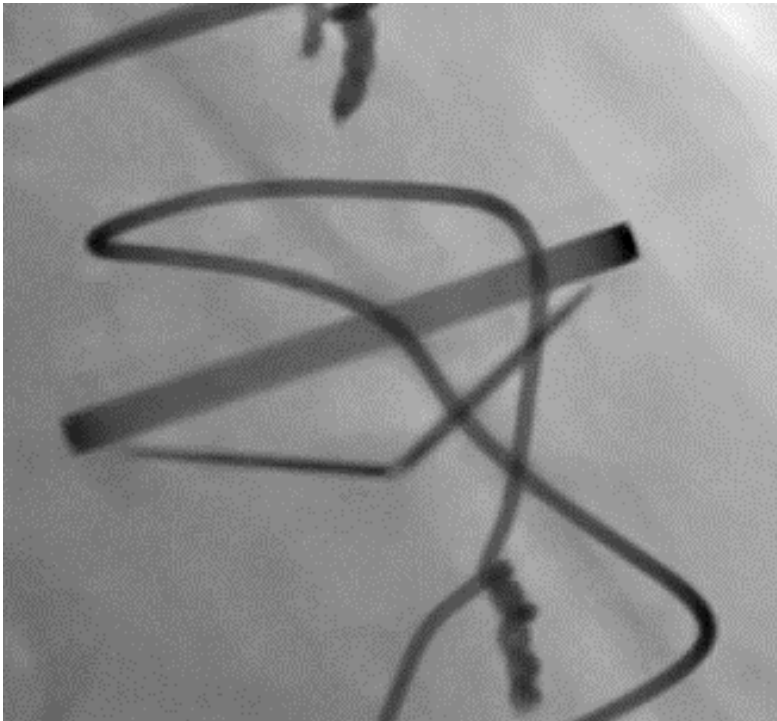
$$OA = 90^\circ - (D/2)$$

Jednodisková náhrada



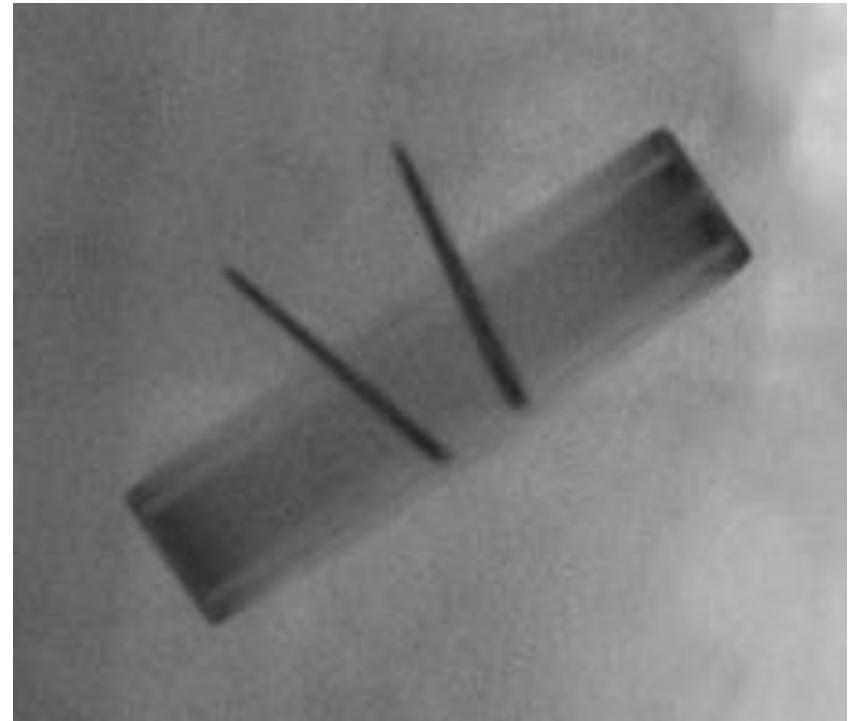
Normální pohyb listů

St. Jude Medical



OA 12° CA 120°

Carbomedics

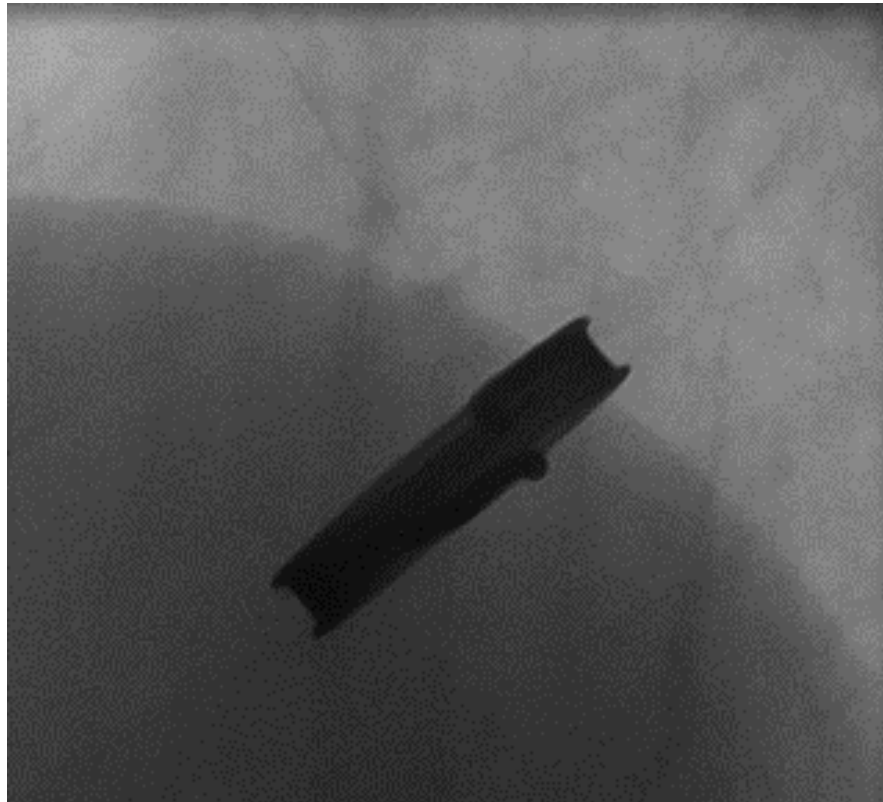


OA 24° CA 130°

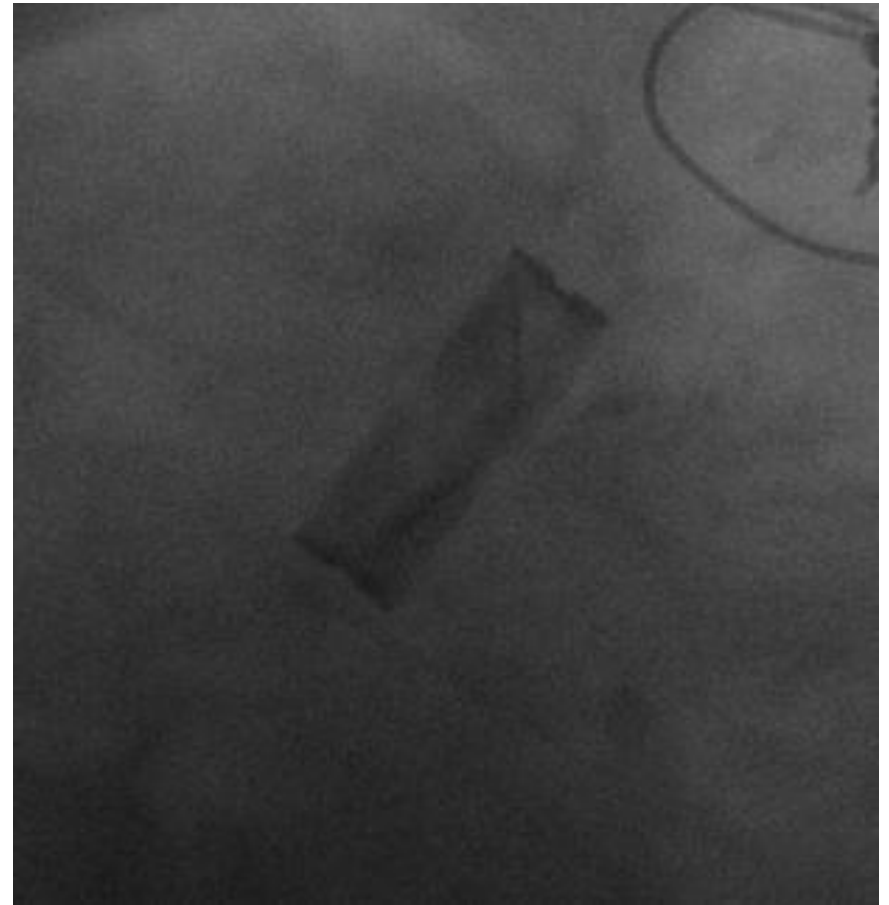
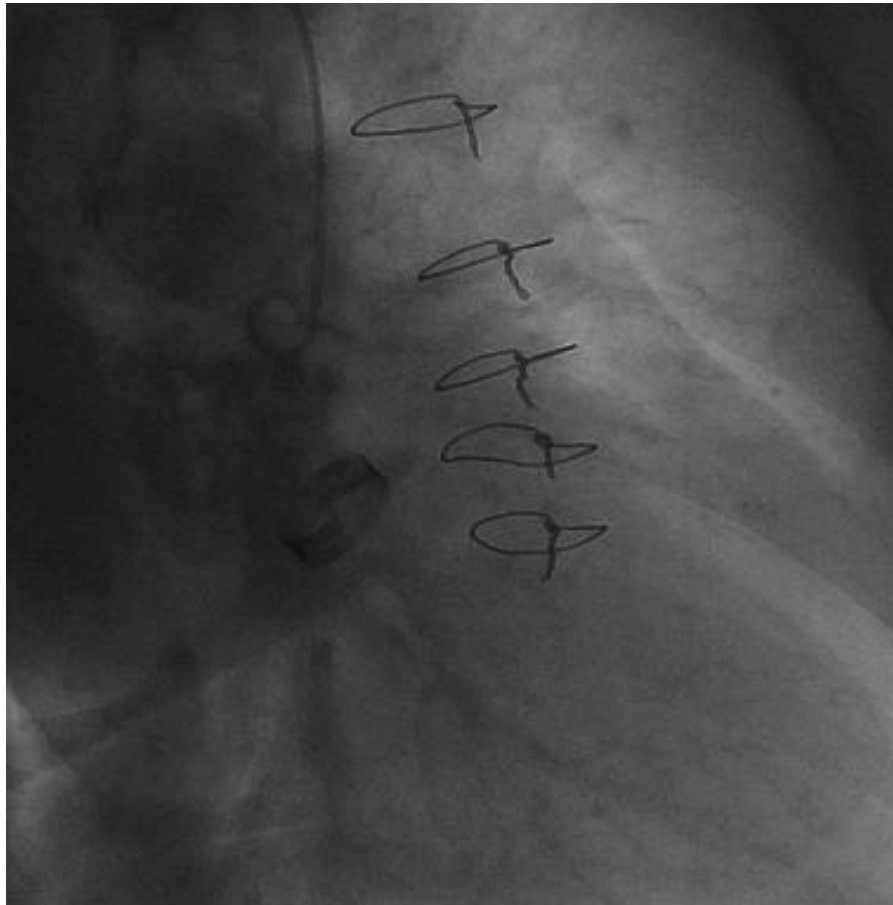
Normální pohyb listů

Sorin Allcarbon

OA 60° CA 0°

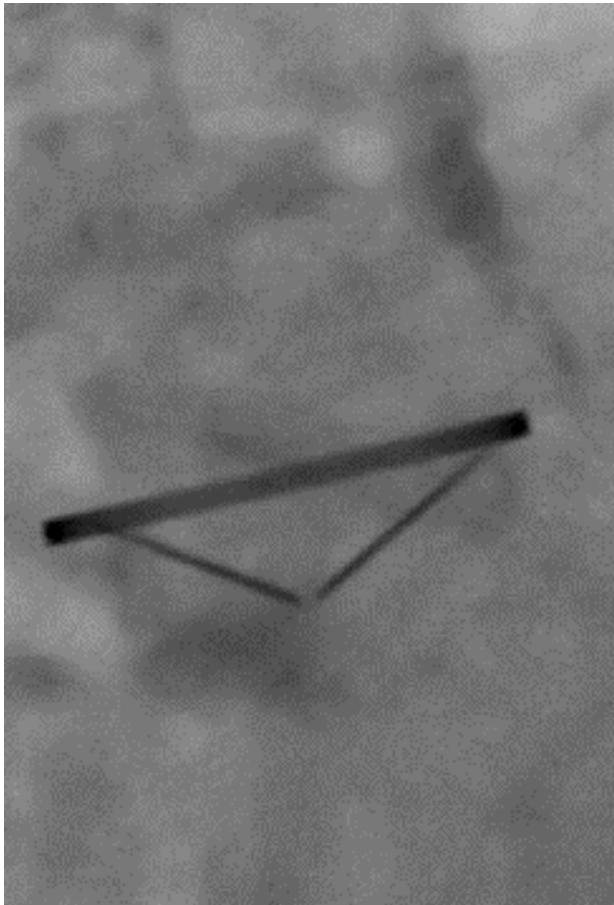


Omezený uzávěr (aortální regurgitace)

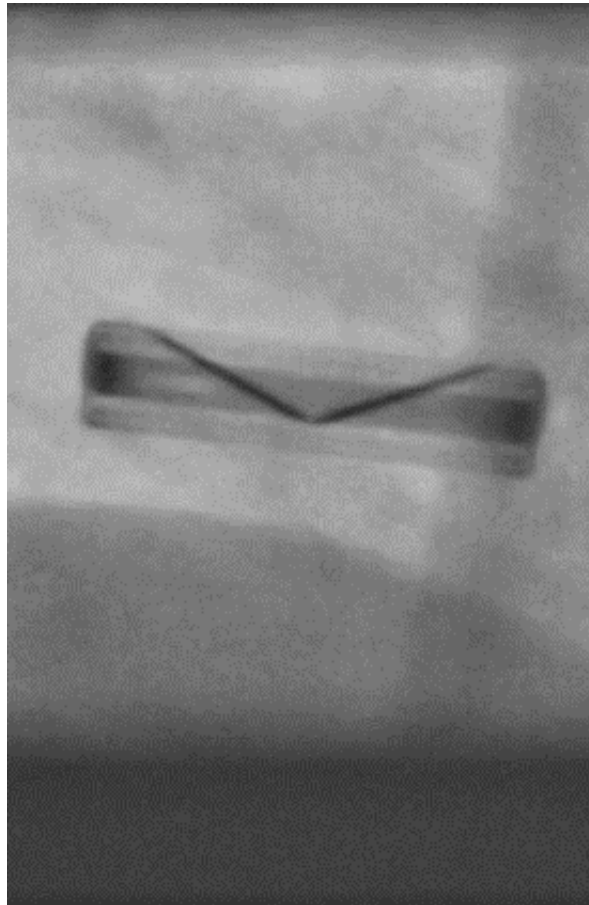


Omezené otevírání

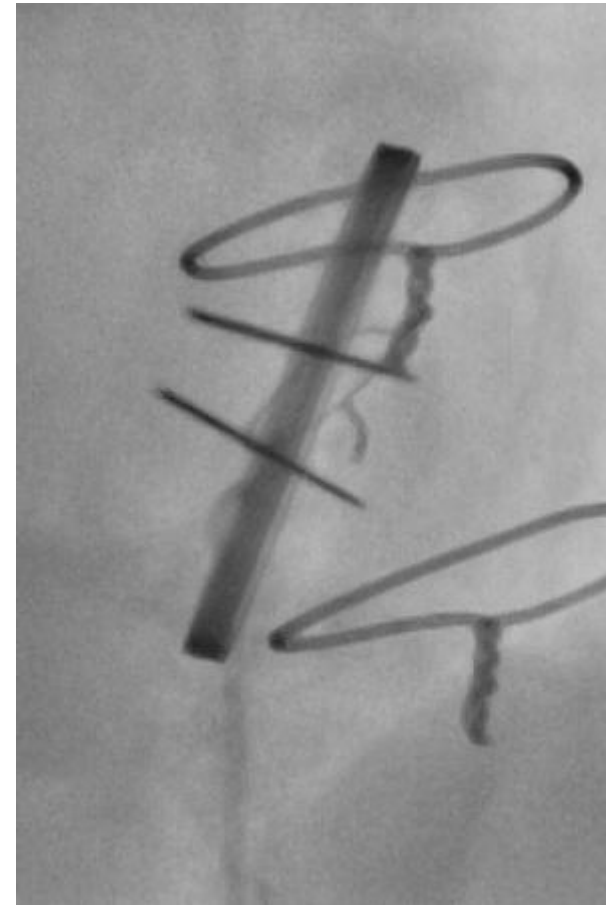
Blokáda listu



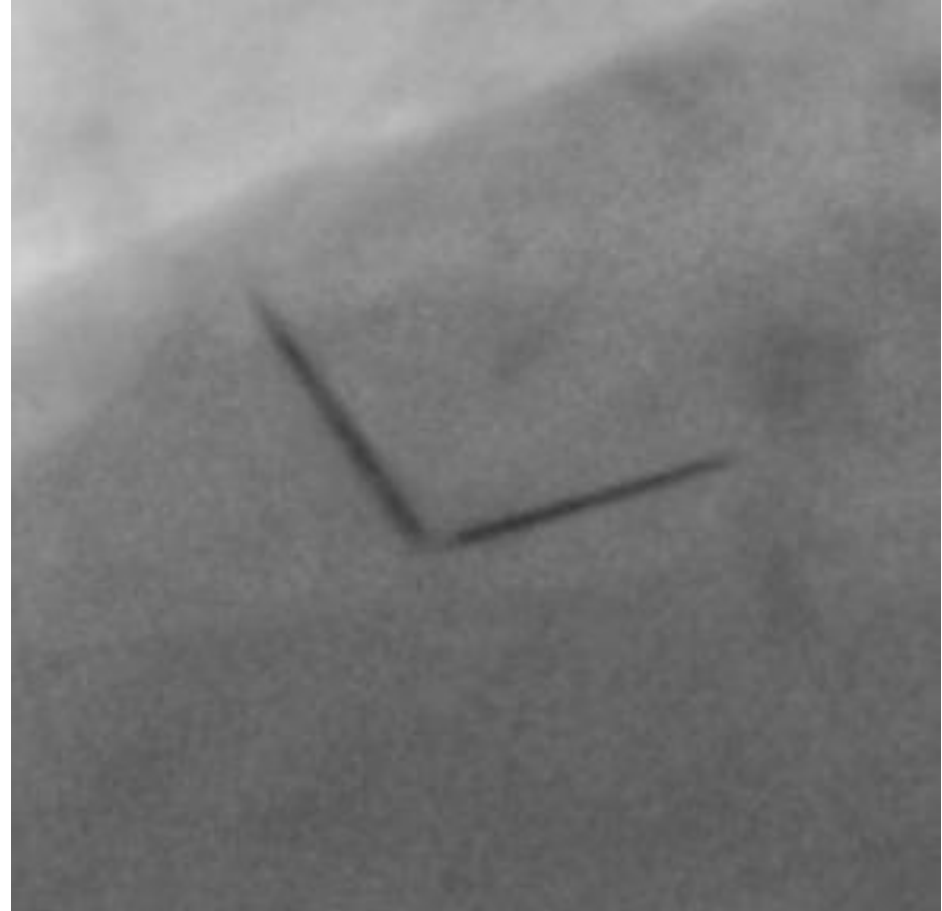
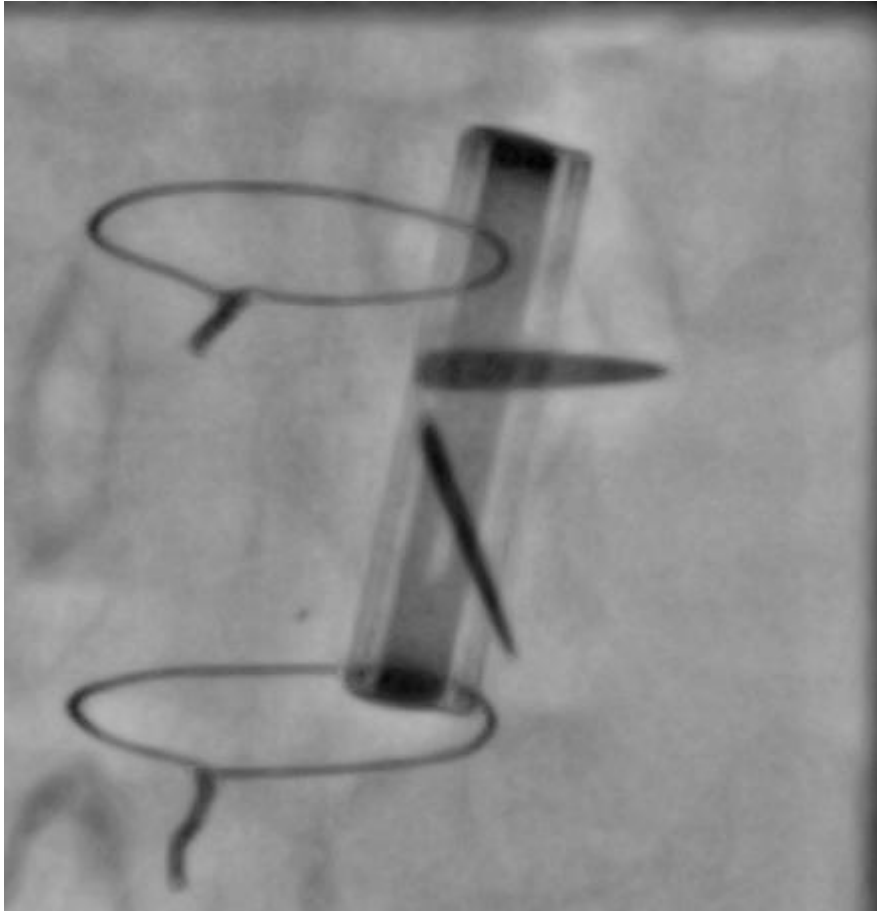
Omezené otevírání



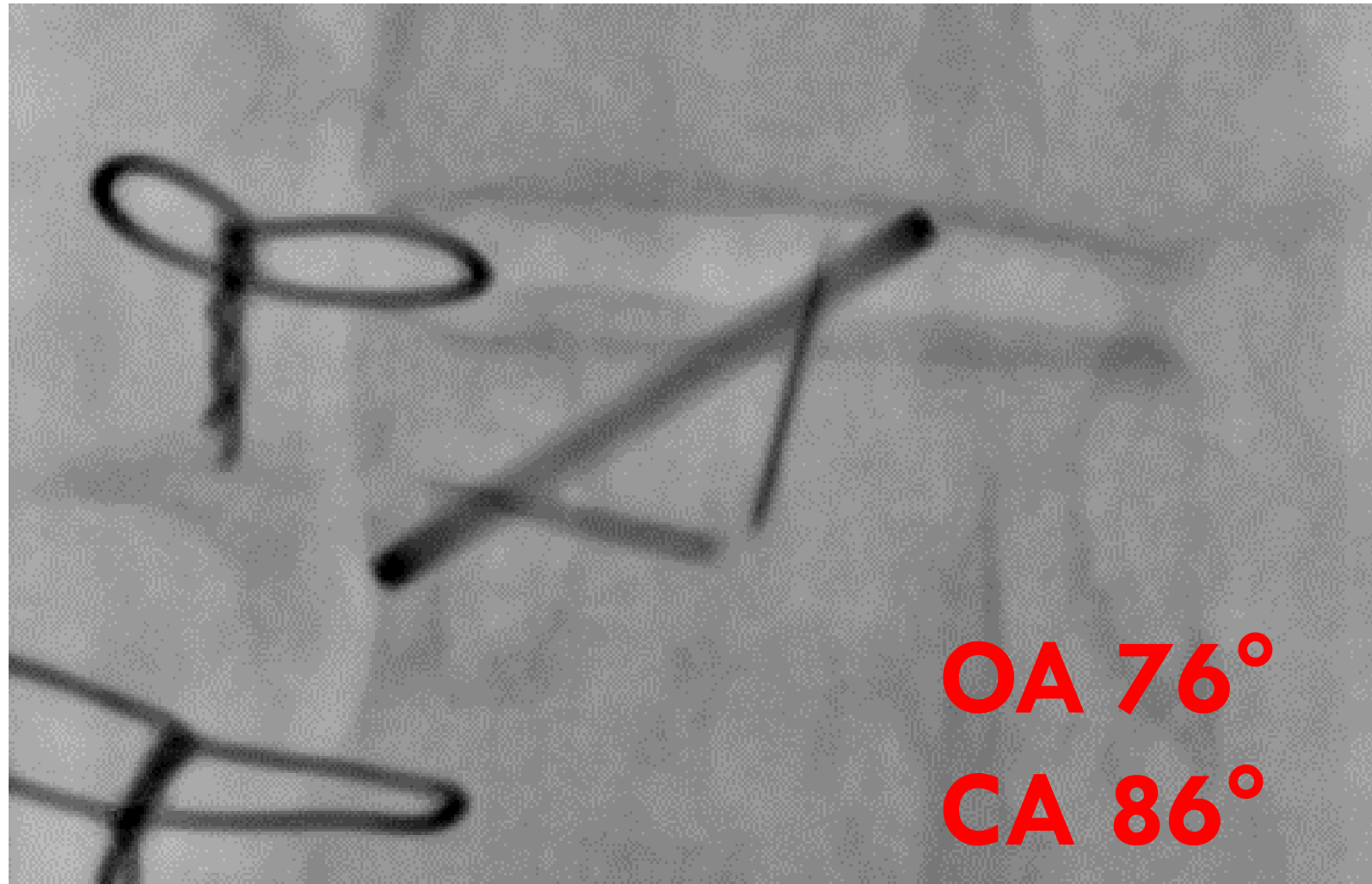
Fibrilace síní



Omezené otevírání (blokáda listu)

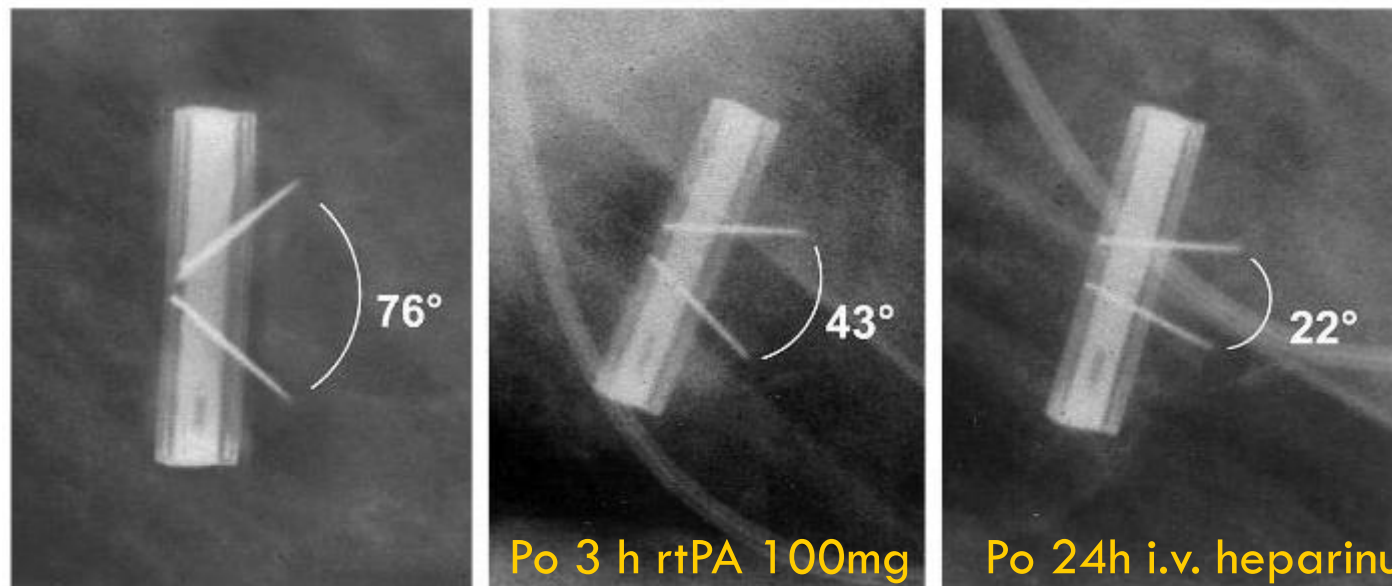


Omezené otevírání i uzávěr

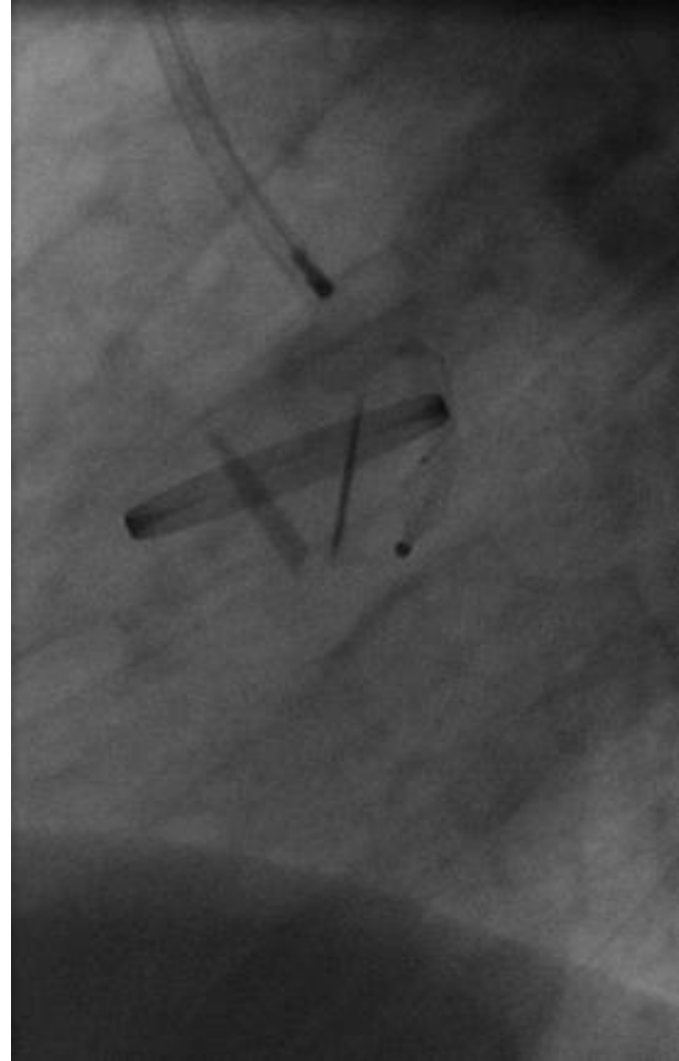
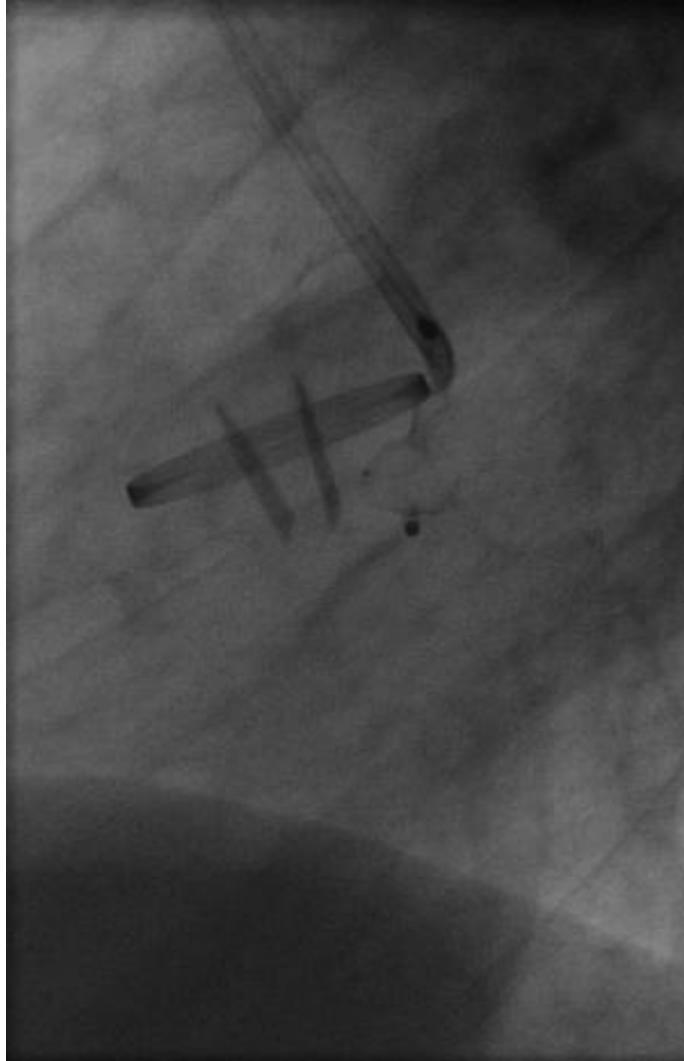


Trombóza mechanické náhrady

- Vzácná komplikace (0,1 - 4%/pacient/rok)
- Může způsobit obstrukci, regurgitaci, embolizaci
- Variabilní klinická manifestace
- Trombolýza představuje alternativu k operaci



Uzávěr paravalvárního leaku



Závěry

- Skiaskopie je jednoduchou a rychlou metodou posouzení funkce MPV
- Pro správné provedení je zásadní znalost typu MPV a normálních hodnot OA a CA
- Poskytuje informace komplementární k echokardiografii
- Musí být interpretována v kontextu klinického obrazu a ostatních zobrazovacích metod

DĚKUJI ZA POZORNOST !

