

Use of CO2 Angiography for Complex EVAR

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Introduction: - Incidence of contrast induced nephropathy is proportional to volume of iodinated contrast used
 - Complex EVAR: - technically challenging requiring multiple images and larger volume of contrast
 - higher incidence of post op renal dysfunction

Aim: - To assess role of CO2 as primary contrast agent in complex EVAR

Methods: - Two Cohorts undergoing branched or fenestrated EVAR were compared : Cohort 1 Iodinated contrast only
 Cohort 2 CO2 primary contrast
 -Endpoints Renal function, Contrast volume, Radiation dose

Results:

	Iodinated contrast	CO2	P value
Change in creatinine (median)	28.5	9.5	0.048
Post op renal dysfunction*	13/41	8/27	N/S
Temporary dialysis	7/41	3/27	N/S
Vol. iodinated contrast (median)	226.25mls	75mls	N/S
Radiation dose	52005 Gy	41836 Gy	N/S



CO2 angiography

CONCLUSION

~ Useful adjunct for complex EVAR
 ~ Allows 'unlimited' images
 ~ Renal dysfunction likely to be multifactorial
 ~ Significant reduction in the median creatinine difference



Iodinated Contrast

Technique

- ~ Lab grade CO2
- ~ Standard cylinder attached to filter and 3 way tap
- ~ Attach 50 ml syringe with floswitch to 3 way tap
- ~ Avoid air contamination and fill using cylinder pressure
- ~ Manually compress syringe of CO2
- ~ Rapidly inject gaseous CO2 into aorta in 30-50ml aliquots



Floswitch

DEMOGRAPHICS	Iodinated contrast	Primary CO2
Male	32	22
Female	9	5
Median age	75 yrs	74 yrs (P=0.15)
Age range	66-85	68-86
Median baseline creatinine	96	102 (P=0.21)