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Osteoarthritis: a vascular disease

OP0354

RADIOGRAPHIC EROSIONS ARE ASSOCIATED WITH FLUORESCENCE OPTICAL IMAGING ENHANCEMENT IN HAND OSTEOARTHRITIS

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Background: Erosive hand osteoarthritis (OA) is a phenotype characterised by more inflammation and erosions of the subchondral bone. Fluorescence optical imaging (FOI) is a novel imaging technique demonstrating altered microcirculation in wrist and finger joints as a sign of inflammation. No previous hand OA study has explored the validity of FOI against radiography.

Objectives: The aim of the current study was to explore the association between radiographic findings and FOI enhancement in the distal (DIP) and proximal interphalangeal (PIP) joints.

Methods: The NOR-HAND study is an observational hand OA study, in which 251 patients (88% female, median age 61 (interquartile range 56–66) years, 35% erosive hand OA) underwent FOI and x-rays of both hands. The FOI-scan was performed after the administration of an intravenous fluorescence dye (indocyanine green, ICG) and 360 images (1/second) were produced in 6 min. Based on the inflow and washing out of the dye the pictures were divided into 3 phases. Finally, the prima vista mode (PVM) represented a composite picture of the first 240 images of the examination. For each phase, fluorescence enhancement in the joints was graded from 0–3 based on signal intensity. Radiographic severity of the joints was evaluated with the Verbruggen Veys (VV) anatomical phase scoring system, which is based on the assumption that OA in finger joints will progress through different phases. To study whether more advanced radiographic phases were associated with FOI enhancement in the same joint, we applied logistic regression analyses with generalised estimating equations adjusting for age, sex, BMI and absence/presence of erosive hand OA, defined at patient level as having at least one DIP and PIP joint(s) in the erosive or remodelled phase.

Results: FOI demonstrated no and uncommon enhancement of the metacarpophalangeal and thumb base joints, respectively, thus we analysed DIP and PIP joints only. FOI enhancement was most commonly seen in phase 2 and PVM, also in the non-affected joints (table 1). The frequency of enhancement was lower for phase 3 and in particular for phase 1. Joints in the erosive phase had statistically significantly higher odds of FOI enhancement in phase 1, 2 and PVM as compared to the non-affected joints (table 1). Having erosive hand OA in other DIP and PIP joints was also associated with FOI enhancement ($p < 0.05$ in all phases except in phase 1), and our stratified analyses confirmed that FOI enhancement in the non-erosive phases was more common in the erosive vs the non-erosive hand OA patients.

Abstract OP0354 – Table 1 Odds of FOI enhancement in joints with increasing radiographic severity according to the verbruggen veys anatomical phase scoring system

	FOI Phase 1, Grade 1-3			FOI phase 2, Grade 1-3			FOI phase 3, Grade 1-3			FOI PVM, Grade 1-3		
	N (%)	OR	CI 95%	N (%)	OR	CI 95%	N (%)	OR	CI 95%	N (%)	OR	CI 95%
All Hand OA Patients												
N phase*	15/1618 (1)	1		1125/1582 (71)	1		333/1575 (21)	1		978/1632 (60)	1	
S phase*	28/2269 (1)	1.16	0.58–2.33	1582/2212 (71)	0.80	0.64–1.00	134/2202 (24)	0.62	0.51–0.76	1311/2288 (57)	0.73	0.62–0.87
E phase*	3/211 (1)	1.71	0.53–5.48	159/206 (77)	1.05	0.7–1.59	40/205 (20)	0.41	0.28–0.61	128/212 (60)	0.79	0.57–1.10
R phase*	12/294 (4)	4.02	1.52–10.6	150/169 (89)	1.89	1.16–3.08	70/169 (41)	0.85	0.56–1.29	136/172 (79)	1.62	1.02–2.56
				96/116 (83)	1.33	0.65–2.72	35/116 (30)	0.50	0.33–0.76	74/124 (60)	0.66	0.42–1.05
Erosive Hand OA												
N phase*	2/191 (1)	1		154/188 (82)	1		70/188 (37)	1		138/196 (70)	1	
S phase*	15/838 (2)	2.63	0.62–11.2	613/818 (75)	0.79	0.50–1.27	247/818 (30)	0.69	0.46–1.02	529/849 (62)	0.76	0.51–1.13
E phase*	2/158 (1)	2.68	0.34–20.9	123/154 (80)	1.11	0.62–1.98	38/154 (25)	0.53	0.33–0.85	102/158 (65)	0.88	0.54–1.44
R phase*	12/294 (4)	7.91	1.32–47.4	150/169 (89)	1.91	1.04–3.52	70/169 (41)	0.94	0.60–1.51	136/172 (79)	1.70	0.98–2.95
				96/116 (83)	1.35	0.62–2.94	35/116 (30)	0.57	0.36–0.90	74/124 (60)	0.70	0.40–1.20
Non-erosive Hand OA												
N phase*	13/1427 (1)	1		971/1394 (70)	1		263/1387 (19)	1		840/1436 (58)	1	
S phase*	13/1431 (1)	0.85	0.36–2.01	969/1394 (70)	0.79	0.61–1.01	287/1384 (20)	0.60	0.47–0.76	782/1439 (54)	0.72	0.59–0.87
E phase*	1/53 (2)	2.95	0.66–13.1	36/52 (69)	0.88	0.44–1.76	2/51 (4)	0.14	0.04–0.54	26/54 (48)	0.62	0.36–1.04

*N phase = Normal phase, *S phase = Stationary phase (classical appearance of OA), *E phase = Joint space narrowing phase, *R phase = Erosive phase (erosion of the subchondral bone), *R phase = Remodelling phase (new irregular sclerotic subchondral plates, large osteophytes)

Conclusions: Joints in the erosive phase have more frequent FOI enhancement than non-affected joints. Furthermore, FOI enhancement in non-erosive phases is more common in patients with erosive vs non-erosive hand OA, suggesting that erosive hand OA is a more inflammatory phenotype. FOI enhancement in phase 2, 3 and PVM was common in joints without radiographic pathology, whereas enhancement in phase 1 was uncommon in joints with severe pathology. Thus,

there is a need to consider other FOI scoring methods for the assessment of FOI enhancement in hand OA.

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Emerging topics in the management of the antiphospholipid syndrome

OP0355

PULMONARY THROMBOENDARTERECTOMY IS A CURATIVE RESOLUTION FOR CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION ASSOCIATED WITH PRIMARY ANTIPHOSPHOLIPID SYNDROME: A RETROSPECTIVE COHORT STUDY

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Background: Chronic thromboembolic pulmonary hypertension (CTEPH) is a rare and life-threatening condition with a poor prognosis in antiphospholipid syndrome (APS) patients. A specialised and multidisciplinary evaluation are needed for APS associated CTEPH. As a curative option for CTEPH, pulmonary thromboendarterectomy (PTE) requires careful risk and benefit assessment in APS patients.

Objectives: This retrospective cohort study aimed to investigate the clinical manifestations and prognosis of CTEPH in APS patients with or without PTE.

Methods: Consecutive patients with APS associated CTEPH diagnosed between January 2012 to September 2017 at Peking Union Medical College Hospital were retrospectively evaluated. Patients were divided into two groups by whether underwent PTE or not. Demographics, clinical manifestations, antiphospholipid antibodies profiles, target medications, treatment were collected as possible influencing factors. Chi-square test was used to analyse the short-term prognosis while Kaplan Meier curve and log rank test were used to analyse long-term prognosis (outcome events: deterioration of cardiac function or death).

Abstract OP0355 – Table 1 Baseline demographic and clinical characteristics of 20 APS associated CTEPH patients

Variables	Total (n=20)	With PTE (n=8)	Without PTE (n=12)	P-value
Female, n(%)	13 (65.0)	4 (50.0)	9 (75.0)	0.27
Median age, yrs	29 ^(19–51)	28 ^(22–32)	34 ^(19–51)	0.09
APS median duration, months	36 ^(1–252)	48 ^(1–76)	32 ^(1–152)	0.49
APL profiles	14 (70.0)	6 (75)	8 (66.7)	1.00
ACL, n(%)	17 (85.0)	7 (87.5)	10 (83.3)	1.00
Anti-β2GP1, n(%)	16 (80.0)	8 (100)	8 (66.7)	0.12
LA, n(%)				
Diagnosis	8 (40.0)	6 (75.0)	2 (16.7)	0.02
Primary APS, n(%)	12 (60.0)	2 (25.0)	10 (83.3)	
SLE-APS, n(%)				
CTEPH Median duration, n(months)	18 ^(1–144)	48 ^(1–76)	7 (1–144)	0.89
Manifestations	5 (25)	2 (25.0)	4 (33.3)	1.00
Chest pain, n(%)	20(100)	8 (100.0)	12(100)	-
DOE, n(%)	4 (20)	0	4 (33.3)	0.12
Cough, n(%)	7 (35)	2 (25.0)	5 (41.7)	0.64
Hemoptysis, n(%)				
Other Thrombotic Events, n(%)	17(85)	7 (87.5)	10 (83.3)	1.00
Target therapies	10 ⁽⁵⁰⁾	5 (62.5)	5 (41.7)	0.65
PDE5i	4 (20)	2 (25.0)	2 (16.7)	1.00
Bosentan				
Baseline WHO FC	7 (35.0)	3 (37.5)	4 (33.3)	0.33
II, n(%)	11 (55.0)	5 (63.5)	6 (50.0)	
III, n(%)	2 (10.0)	0	2 (16.7)	
IV, n(%)				
Posttreatment WHO FC	10 (50.0)	7 (87.5)	3 (25.0)	0.01
I, n(%)	7 (35.0)	1 (12.5)	6 (50.0)	
II, n(%)	3 (15.0)	0	3 (25.0)	
III, n(%)				

Results: A total of the 20 APS associated CTEPH patients were enrolled, 8 underwent PTE and 12 without PTE. Common CTEPH developed by these patients included chest pain, dyspnea on exertion, cough and hemoptysis. Chi-square test ($p=0.01$) and Kaplan Meier curves (Log rank test, $p=0.04$) showed that there was statistically significant difference in both short-term and long-term prognosis among patients with PTE and without PTE. On the other hand, Cox regression analysis showed diagnosis (PAPS or SLE-APS), aPL (antiphospholipid antibody) profiles, thrombocytopenia, other Thrombotic Events, target therapies,