

-

o you by

 *Browse Posters » Search result » Poster ECR 2023 / C-18073*

POSTER SECTIONS

Coverpage

Purpose

Methods and materials

Results

Conclusion

Personal information and conflict of interest

References



ECR 2023 / C-18073

Assessment of anatomical changes by pulmonary Angio-CT resulting from pulmonary thromboembolism

Congress:

ECR 2023

Poster Number:

C-18073

Type:

Scientific Exhibit

Keywords:

Radiographers, CT-Angiography, Diagnostic procedure, Screening, Epidemiology, Obstruction / Occlusion, Patterns of Care

Authors:

I. Costa, L. P. V. Ribeiro, A. Abrantes, S. I. Rodrigues, J. Pinheiro, K. B. Azevedo

DOI:

10.26044/ecr2023/C-18073

DOI-Link:

<https://dx.doi.org/10.26044/ecr2023/C-18073>

Purpose

PTE (Pulmonary Thromboembolism) is the third most common cause of cardiovascular death, with more than 600,000 cases per year in the US. This pathology has a wide spectrum of presentations and severity, with some patients experiencing shock, requiring urgent thrombolysis, while others can be safely treated on an outpatient basis with anticoagulation treatments alone (John, Marti Poletti, Perrier, 2014). The degree of pulmonary arterial obstruction and the previous cardiorespiratory status determine the hemodynamic consequences of PTE, the elevation of pulmonary pressure is insignificant until the...

[Read more](#)

Methods and materials

The RV is part of a low-pressure system with low-resistance afterload (the pulmonary artery), has thin walls, and is half-moon-shaped, whereas the LV has thick, muscular walls (fig. 1) , generating great pressure against a high-resistance afterload (aorta), unlike the RV which is not capable of acute increases in afterload (fig. 1) (Bryce, et al., 2019). [Fig 1] The sample consisted of 111 patients undergoing computed tomography pulmonary angiography with confirmation of PTE. The instruments necessary to carry out the data collection of this research...

[Read more](#)

Results

This research work was composed of 111 patients who underwent pulmonary Angio-CT and were diagnosed with PTE. Among the 111 exams used for this study, 55 corresponded to female patients and 56 corresponded to male patients, as can be seen in Table 1. [Table 1] Regarding the anatomical alterations analyzed according to age, the age group where the highest percentage of alterations is verified, being 29.72% for RV dilation, 8.11% for PA trunk dilation, 20.72% for SI curvature was the age group "65-79 years". Comparing...

[Read more](#)

Conclusion

Age was correlated with the diameter of the RV/LV ratio, being directly correlated, that is, with advancing age, a greater ratio of the RV/LV diameter is observed. A higher occurrence was seen in the age group of “65-79 years old”, followed by the age group “over 80 years old”, which goes against the direct proportionality mentioned above. This event is explained by the number of patients in each group, which was 45 and 33, respectively. It should be noted that if the sample had been...

[Read more](#)

Personal information and conflict of interest

I. Costa: Nothing to disclose L. P. V. Ribeiro: Nothing to disclose A. F. C. L. Abrantes: Nothing to disclose S. I. Rodrigues: Nothing to disclose J. Pinheiro: Nothing to disclose K. B. Azevedo: Nothing to disclose

[Read more](#)

References

Bryce, Y., Perez-Johnston, R., Bryce, E., Homayoon, B & Santos-Martin, E. (2019). Pathophysiology of right ventricular failure in acute pulmonary embolism and chronic thromboembolic pulmonary hypertension: a pictorial essay for the interventional radiologist. *Insights into Imaging*. 10: 18. Costa, C. (2017). Medidas Preventivas Do Tromboembolismo Venoso No Doente Hospitalizado: Uma Revisão Integrativa Da Literatura. Mestrado. Escola Superior de Saúde de Viseu, Instituto Politécnico de Viseu. Ende-Verhaar, Y, Kroft, L., Mos, I., Huisman, M. & Klok, F. (2017). Accuracy and reproducibility of CT right-to-left ventricular diameter...

[Read more](#)



Fig 1: Figure 1: A) Pulmonary CT angiography showing the anatomy of the heart. The...

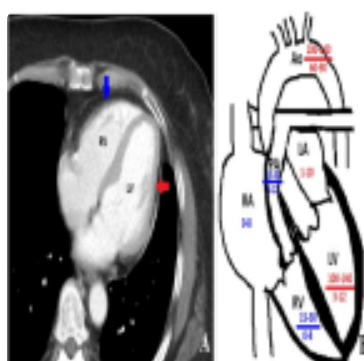


Fig 2: Figure 2: Angio-CT scans, with measurement of the diameter of the pulmonary...

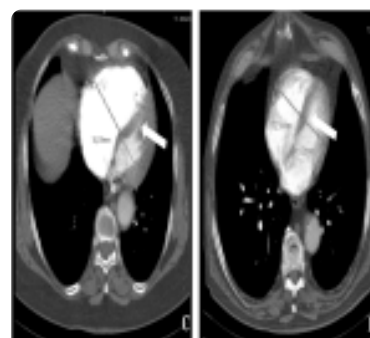


Fig 3: Figure 3: Angio-CT scans, with measurement of the right and left ventricles and...

	N	%
Female	55	49.5
Male	56	50.5
Total	111	100

Table 1: Distribution of patients according to sex.

	N		%	
	Percent	Heart	Percent	Heart
Dilation RV	86	25	77.48	21.52
Dilation Pulmonary Trunk (PT)	51	48	55.86	44.14
Interventricular Sept Curvature	51	80	45.95	54.05

Table 2: Distribution of the presence of anatomical alterations "RV dilation", "PA...

Age	N	RV	PA Trunk	Int Sept
		Dilation	Dilation	Curvature Present
20-34	5	3 (2.70%)	2 (1.80%)	1 (1.80%)
35-49	13	10 (9.02%)	3 (3.70%)	4 (3.80%)
50-64	25	10 (9.02%)	9 (8.12%)	4 (3.80%)
65-79	45	33 (29.72%)	31 (27.92%)	25 (22.70%)
>80	33	30 (27.02%)	17 (15.32%)	18 (16.37%)
Total	111	86 (77.48%)	62 (55.86%)	51 (45.94%)

Table 3: Distribution of the presence of anatomical alterations "RV dilation", "PA...

N	RV Diameter	LA Diameter	RV/LV	PA Diameter
Male 56	48.89	39.43	1.29	38.27
Female 55	49.84	40.29	1.29	39.17
Total 111	49.33	40.00	1.29	38.72
Male 55	7.15	7.41	0.58	3.86
Female 56	7.40	8.43	0.56	4.29
Total 111	7.28	7.92	0.58	4.08
Male 55	33.41	28.87	0.75	31.79
Female 56	31.88	25.64	0.80	33.02
Total 111	32.15	26.36	0.77	32.41
Male 55	62.27	58.09	1.12	51.38
Female 56	66.74	67.36	1.30	60.74
Total 111	64.51	62.48	1.21	56.05

Table 4: Descriptive statistics of data collected from the sample according to gender.

N Sept Curvature	RV	LA	RV/LV	PAET
Male 51	51.24	39.63	1.30	39.29
Female 40	49.08	40.81	1.23	38.34
Total 111	50.15	40.00	1.28	38.73
Male 51	8.20	8.23	0.81	4.88
Female 40	6.45	7.29	0.86	4.17
Total 111	7.30	8.08	0.83	4.53
Male 51	51.88	25.64	0.89	31.88
Female 40	53.45	28.84	0.79	31.79
Total 111	51.88	25.64	0.89	31.79
Male 41	64.79	57.01	1.30	50.81
Female 50	61.50	67.36	1.10	59.73
Total 111	64.79	67.36	1.30	60.14

Table 5: Descriptive statistics of data collected from the sample according to the...

	t	df	Sig.	Mean Diff	SD Diff	Conf. Interval 95%	
						Inf.	Sup.
Ratio de Dilatación RV/LV	0.82	109	0.42	0.02	0.07	-0.12	0.14
PAET Diameter	-1.75	109	0.09	-1.86	0.77	-4.44	-1.27
N Sept Curvature	1.31	109	0.19	0.13	0.1	-0.07	0.33
RV Dilation	0.17	109	0.86	0.02	0.08	-0.10	0.17
PAET Dilation	-0.82	109	0.42	-0.08	0.09	-0.83	-0.05

Table 6: Student's t test comparing gender and ratio of RV/LV diameter, PA diameter,...

	t	df	Sig.	Mean Diff	SD Diff	Conf. Interval 95%	
						Inf.	Sup.
RV/LV	-1.25	109	0.21	-0.05	0.05	-0.28	0.18
RV Dilation	-1.75	109	0.09	-1.86	0.77	-4.44	-1.27
N Sept Curvature	1.31	109	0.19	0.13	0.1	-0.07	0.33

Table 7: Student's t test comparing PA trunk dilation and RV/LV diameter ratio, RV...