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LETTER TO THE EDITOR

Perifascicular necrosis in anti-synthetase syndrome beyond anti-Jo-1

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Sir,

The papers by Mescam-Mancini *et al.* (2015) and Stenzel *et al.* (2015) are of particular interest, at least partially addressing the important question whether anti-synthetase syndrome is pathologically distinct from other idiopathic inflammatory myopathies. Mescam-Mancini *et al.* (2015) beautifully demonstrated that patients with anti-Jo-1 antibodies, one of the anti-aminoacyl-tRNA synthetase (ARS) antibodies, characteristically show perifascicular necrosis on muscle pathology. However, they did not deal with anti-synthetase syndrome patients with anti-ARS antibodies other than anti-Jo-1, raising a question whether perifascicular necrosis is characteristic only of myopathies associated with anti-Jo-1 antibodies or is observed also in those associated with other anti-ARS antibodies. We have analysed muscle samples from patients with anti-Jo-1 antibodies ($n = 15$) and non-Jo-1 anti-ARS antibodies ($n = 35$), based on the criteria described in the paper. As small regenerating fibres grouped in the perifascicular area could mimic perifascicular atrophy, we excluded type 2C fibres in judgement of perifascicular atrophy. The antibodies were evaluated by means of RNA immunoprecipitation assay, which is a superior detection method for the antibodies in terms of sensitivity and specificity (Suzuki *et al.*, 2014). Frequencies of patients who showed myofibre necrosis and atrophy, respectively in perifascicular regions were similar among patients with anti-Jo-1, anti-OJ, and anti-PL-7 antibodies (Fig. 1 and Table 1). These data indicate the presence of the same pathological features in anti-Jo-1, anti-OJ, and anti-PL-7 myopathies. Albeit small series, some patients with anti-EJ or anti-KS antibodies also showed perifascicular necrosis without perifascicular atrophy, raising a possibility that anti-EJ and anti-KS myopathies may also show the pathological phenotype similar to anti-Jo-1 myopathy. In contrast, muscle pathology of all four patients with anti-PL-12 antibodies had no or few necrotic and regenerating fibres, naturally not showing perifascicular necrosis. Also these patients' muscle symptoms were milder with Medical Research Council grades 4 or greater and

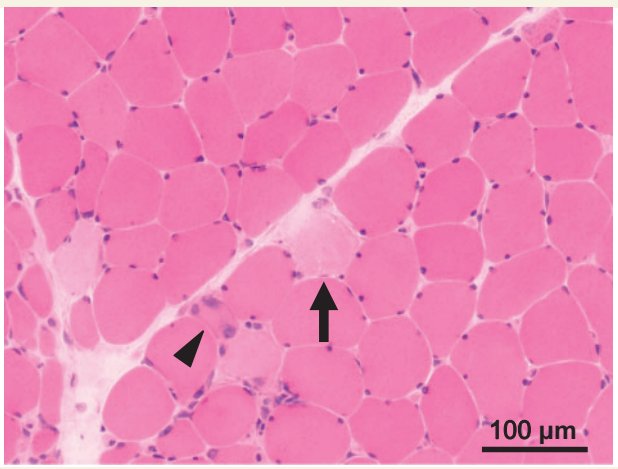

Figure 1 Perifascicular necrosis of a patient with anti-OJ antibodies. Necrotic (arrow) and regenerating (arrowhead) fibres are preferentially located in the peripheral regions of the muscle fascicles.

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Table 1 Perifascicular necrosis and atrophy

	Jo-1 (*n* = 15)	OJ (*n* = 13)	PL-7 (*n* = 12)	EJ (*n* = 5)	KS (*n* = 1)	PL-12 (*n* = 4)
Myofibre necrosis in perifascicular regions	7 (47%)	6 (46%)	8 (67%)	3	1	0
Myofibre atrophy in perifascicular regions	3 (20%)	3 (23%)	2 (17%)	0	0	0

There are no statistically significant differences among patients with anti-Jo-1, -OJ, or -PL-7 antibodies ($P = 0.50$ and 0.92, respectively. Chi-square test).

serum creatine kinase levels less than twice the upper limit of normal. This may indicate the exceptional nature of anti-PL-12 antibodies, in line with the previous reports showing less frequent and milder skeletal muscle involvement in anti-PL-12 patients (Hervier *et al.*, 2010; Hamaguchi *et al.*, 2013), although they are inconclusive due to the limited sample number. We need further studies regarding this point.

Our data suggest that perifascicular necrosis is a pathological feature not only in anti-Jo-1 myopathy but also in anti-synthetase syndrome associated with other anti-ARS antibodies, at least anti-OJ and -PL-7.

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