

Blood Supply and Skeletal Muscle Infarction

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BACKGROUND: Muscle infarction is a rare complication of spontaneous ischemic necrosis occurring in skeletal muscle. It is particularly common in patients with diabetes who have impaired sugar regulation. However, muscle infarction is frequently misdiagnosed due to varied clinical manifestations.

METHODS:

We presented 3 cases of muscle infarction reported during April 2009 to April 2014. After a comprehensive literature review, we selected 147 muscle infarction cases from the literature, first investigating the relationships between type of muscle blood supply and infarcted muscle.

RESULTS:

The result indicated that muscle infarction 25.85 % belonged to type I vascular supply and 61.21% belonged to type II vascular supply, according to the definition by Mathes and Nahai.

CONCLUSIONS:

Poor glucose regulation, intense exercise without adequate hydration, vascular disease, and type I and II muscular blood supply were critical predisposing factors. For preventing muscle infarction, we recommend strict glucose regulation and a gradual increase in exercise with adequate hydration.

FIGURE LEGEND:

Figure 1

Upper : Axial view of MRI with hyper intense signal

Lower:: Coronal view with infarcted gastrocnemius and subcutaneous edematous change.

Table 1

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Figure 1

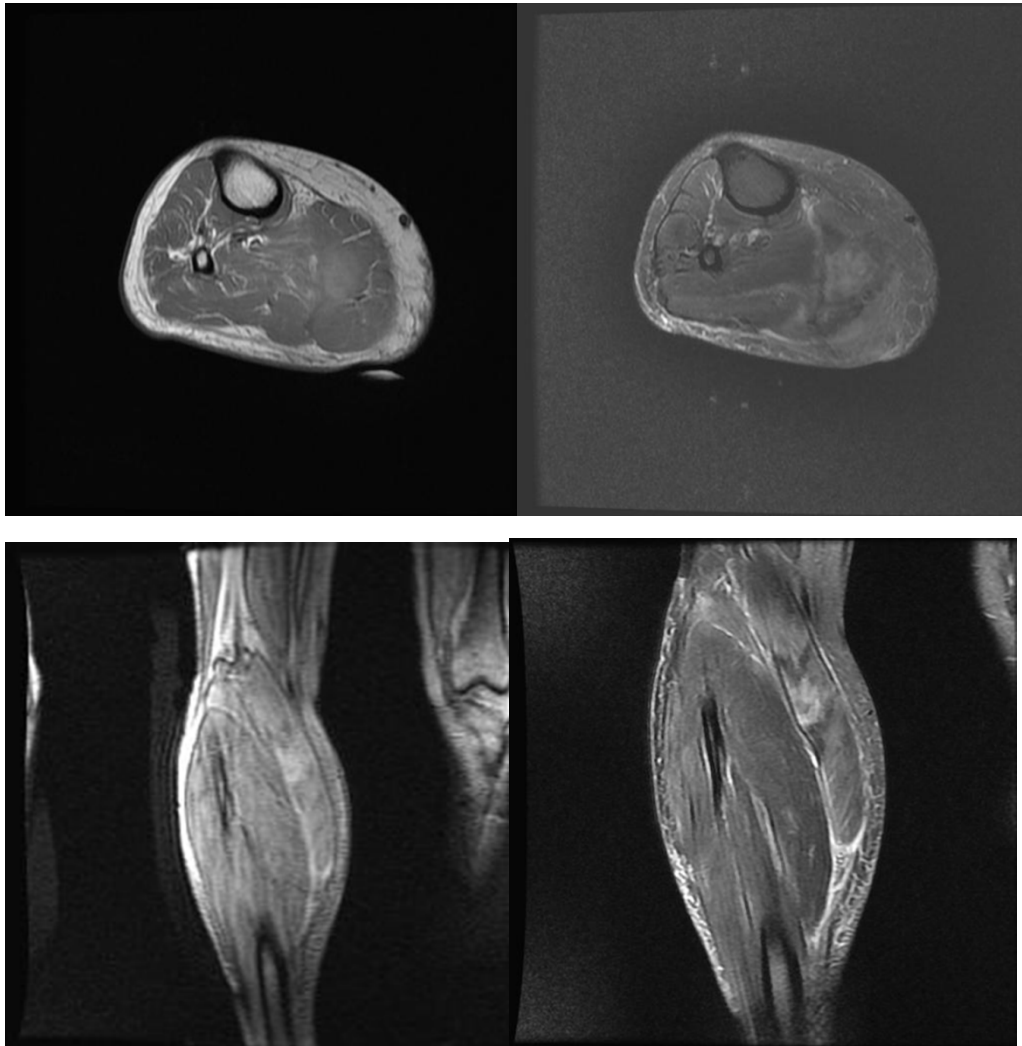


Table 1 Vascular type of infarcted muscles

Muscle involvement	Classification	Jelinek 1999	Huang 2010	Litvnov 2012	Arroyave 2013	Lai 2014	Total Nr.(%)
VM	II	26	0	0	1	0	27 18.37%
VL	I	26	0	0	1	0	27 18.37%
VI	II	20	0	0	0	0	20 13.6%
RF	II	14	0	0	0	0	14 9.52%
Gastrocnemius	I	7	1	1	0	2	11 7.48%
BF	II	10	0	0	0	0	10 6.80%
Sartorius	IV	10	0	0	0	0	10 6.80%
Adductor	Not classified	9	0	0	0	0	9 6.12%
Soleus	II	6	1	0	0	0	7 4.76%
Gracilis	II	6	0	0	0	0	6 4.08%
Peroneus	II	5	0	0	0	0	5 3.40%
Triceps	II	0	0	0	0	1	1 0.68%

Total: 147, type I: 25.85%, type II: 61.21%, type III: 0, type IV: 6.8%

Note:

Classification by Mathes and Nahai⁵

VI: Vastus intermedius , VM: Vastus medialis , VL: Vastus lateralis , RF: Rectus femoris BF: Biceps femoris

