Dear Editor,

Chronic lower back pain (CLBP) is one of the most common musculoskeletal disorders in modern society which seriously impacts the people’s daily life [1]. Approximately 70–85% people suffer lower back pain (LBP) at some point in their lives [2]. The recently global review of the prevalence of LBP in the adult general population was published in 2000 and showed point prevalence of 12–33% and 1-year prevalence of 22–65% [3].

Massage which is perceived as a safe therapeutic modality without any significant risks or side effects is widely used in the treatment of CLBP [1]. It is defined as a manipulation using the hands or a mechanical device, in which numerous specific and general techniques are used in sequence, such as effleurage, petrissage, and percussion. The mechanic of Massage therapy include: local vasodilation and increase blood and lymph circulation to improve the nutritional status of local organs; deep tissue blood flow to the surface or reduced blood flow locally to reduce congestion; regulation of muscle function, increased muscle flexibility, relief of muscle tension, and promotion of metabolite excretion; regulation of nerve function: stimulating, inhibiting, or fatiguing the nerves [4,5].

Our patient was a 59-year-old male who received a 30 minutes deep tissue massage therapy during which the therapist used his hand, wrist and elbow to aggressive press the patient’s lower back and buttocks to alleviate CLBP. Within 2 hours of the deep tissue massage, he began to feel pain in the central of left buttock. Visual analogue scale (VAS) of the pain is 6 (the boundary of scale is 0–10, rating them from “no pain at all” to “the worst pain imaginable”). Four hours later, the pain had gradually increased that the VAS reached nine meanwhile there was an obvious swelling appeared in the central of left buttock. The patient was sent to hospital by ambulance and examination findings on admission were as follows: blood pressure: 160/100 mm Hg, conscious with stable vital signs, protruding and obviously swollen of the central of left buttock, and the numbness of the back of the thigh, down through the leg and foot. Ultrasound examination identified a hematoma within the muscle fibers of left gluteal maximus. Blood test: hemoglobin, 93 g/L; red blood cell count, 2.82 × 10^{12}/L; platelet count, 112 × 10^9/L; and hemagglutination: thrombin time, 18.6 second; fibrinogen, 1.665 g/L. To observe the changes in condition, we had not prescribed the pain medication. The patient was prescribed strict bed rest and with sandbag pressure on the buttocks, followed by the pain gradually relieved. However, with no defecation after 20 hours, the pain suddenly worsened and pressure in the left buttock increased significantly. Magnetic resonance imaging (MRI) revealed a significant hematoma in the gluteus maximus fibers (Figure 1) and angiography revealed bleeding from a small artery (Figure 2). Subsequent endovascular embolization treatment which used the small coil to stop bleeding of the tiny artery via femoral artery vessel was done and the pain was relieved gradually (Figure 3).

Massage therapy is an effective and widely used alternative therapy. It has been widely used for relieve pain and promote functional recovery [4]. Deep tissue massage is a form of massage used to work with tissues in layers to relax,
extend, and unlock the persisting, incorrect tensions, in the most effective and energy-efficient manner. Therapists working with this type of massage aim to change the soft tissues structure and limit the motion of the muscles. Many patients choose deep tissue massage to relieve CLBP [6]. However, the treatment may be harmful in few cases. In our case, the damaged blood vessel was an arteriole of the superficial branch of the superior gluteal artery. Arterioles are normally elastic; however, with increasing age, the vessel wall stiffens as a result of blood vessel wall thickening, intimal calcification, and lipid deposition [7]. De Simone et al. studied blood vessel elasticity in 373 children and 393 adults and found that arterial compliance decreased with age. Arterial elasticity is negatively correlated with age [8] and high blood pressure can also cause hardening of arterioles [9]. Arteriole flexibility had decreased significantly in our case, making the arterioles prone to rupture with external forces and when subjected to aggressive massage therapy such as deep tissue massage therapy, the blood vessel ruptured. This case report suggests that clinicians should consider the status of the vascular system (potential blood vessel brittleness) when selecting therapeutic massage techniques for patients.

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**References**


7. Gepner AD, Korcarz CE, Colangelo LA. Longitudinal effects of a decade of aging on carotid artery...
Sequelaes of Cannabis as Medicine

Dear Editor,

Cannabis has been used for a variety of reasons for thousands of years, including as a medication; however, the term “medical marijuana” has been a more recent term used to describe its potential medical benefit. Currently 23 states and the District of Columbia have legalized cannabis in some form, with Colorado, Washington, Oregon and Alaska being the only states which have approved cannabis for both medical and recreational purposes. The most common diagnosis people use cannabis for medical purposes is “pain” [1].

From a physiological perspective, we know how the most recognized component of cannabis (THC) works in the human body and there is some evidence that there are components of cannabis may work for certain painful conditions [2]. The endocannabinoid system has been well described in the medical literature and it is felt that cannabis exerts its primary effects on the cannabinoid1 (CB1) receptor. These receptors are found in high concentrations in the central nervous system but are also found in the peripheral nervous system and have multiple effects (coordinating, appetite, sedation), including potential pain-relieving effects. Cannabinoid2 (CB2) receptors are found on immune cells and tissues and may be associated with potential anti-inflammatory effects [2]. There are synthetic cannabinoids that have been used for several years, particularly in chemotherapy-associated nausea (dronabinol) as well as AIDS-related cachexia (nabulone). Sativex, a non-synthetic combination of THC and cannabidiol (CBD) has been used in Europe for several years and has been shown to be of some benefit in MS-related spasticity [3].

A recent review of the literature also suggests the benefit of cannabis products in some painful conditions [4], including neuropathic pain, osteoarthritis, and fibromyalgia. The author, however, did note that the main limitations to their findings are short trial duration, small sample sizes, and modest effect sizes. Thus, there is a need for larger trials of longer duration so that efficacy and safety, including potential for abuse, can be examined over the long term in a greater number of patients.

There have been other studies which supported the use of cannabinoids in several neurological disorders [5]; however, those authors also noted that adverse events, such as cognitive impairment are a significant concern with marijuana use. Those authors also noted that smoked marijuana is of unclear efficacy for reducing central pain or painful spasms in Multiple Sclerosis.

Other recent data have demonstrated structural changes in the brain which may be related to cannabis use, possible negative impact on IQ, detrimental psychiatric, and serious, potentially harmful cardiovascular effects [6]. There appears to be a strong link between cannabis use and psychiatric illness, such as schizophrenia and psychosis documented in the medical literature [9].

“Pain” is an incredibly broad diagnosis and those states which are tracking any data, cannot differentiate between specific pain diagnoses. In Colorado, for example, 94% of the over 115,000 medical marijuana cards were recommended for “pain,” while 3% were recommended for a similarly broad “cancer” diagnosis. There likely are patients who may be benefitting from cannabis and cannabis products. However, many recommendations are being made by physicians with little to no training in pain, and typically there is no medical followup.

Regulations and treatable conditions related to cannabis as medicine vary highly from state to state and there is no consensus across state lines as to how cannabis should be utilized as a medication. The THC content for any product, inhaled or ingested, can vary from 10% to over 80%. There is no consistency with dosing and patients can medicate with smoke (containing carcinogens), oil (high potency), or a cupcake, among other edible products. Cannabis has not met the rigor of FDA clinical trials, like any other medication has.

A recent audit of the Denver medical marijuana program demonstrated a significantly flawed system [10], making note that the number of medical marijuana dispensaries in the City of Denver was basically unknown. As a result of expansion of the medical marijuana industry in Colorado, there has been more widespread use and subsequent treatment, particularly in adolescents and young adults. Of concern is the fact that in Colorado, treatment for marijuana use in the 12–19-yearold age group comprised nearly 36% of ALL age groups combined while 3% of that age group was treated for alcohol, compared with other groups [11]. The number of driving

8 de Simone G, Roman MJ, Daniels SR. Age-related changes in total arterial capacitance from birth to maturity in a normotensive population. Hypertension 1997;29:1213–7.