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Case Report

Acute Ischemia of the Right Upper Limb and Ischemic Stroke in a Young Woman after the Consumption of Cannabis

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Abstract: Cannabis is one of the most present and easily accessible narcotics in the world. The responsibility of cannabis in these consumers in the occurrence of psychiatric and neuropsychiatric effects has been demonstrated by researchers for a long time, but in recent decades it has been indexed in the occurrence of somatic events, notably cardiovascular. We will report the case of a young patient aged 29, with no pathological history; hospitalized in the vascular surgery department of the CHU Hassan II for ischemic stroke and acute ischemia of the right upper limb after the consumption of cannabis. The etiological research of these clinical events orients us to direct the responsibility of cannabis whose consumption emerged during the anamnesis in our patient, after the elimination of all possible etiologies that may be responsible for the clinical events. This case highlights the possible involvement of cannabis in the occurrence of stroke and acute ischemia of the limb in a young subject without any cardiovascular risk factors. Note that the responsibility of cannabis in the occurrence of ischemic stroke is well known but its responsibility in the occurrence of acute limb ischemia has not been reported in any literature.

Keywords: Young subject, Cannabis, Stroke, Acute ischemia.

INTRODUCTION

Cannabis is the most common drug in the world and its consumption is constantly increasing [1]. In 2014, 17 million people aged between 11 and 75 had tried cannabis during their lifetime in metropolitan France, of whom 4.6 million consumed it during the year, 1.4 million used it regularly (at least 10 times a month) and 700,000 consume it daily [2], Its use mainly concerns young people aged between18 and 25, and there are more than 72 million regular or occasional consumers in the United States [3]. Bramley-Harker estimates over 3.2 million consumers in Great Britain [4].

If the psychiatric and neuropsychic effects of cannabis have long been widely described [5], the somatic effects of smoked cannabis, in particular cardiovascular and neurovascular, have only recently been reported.

Vascular accidents (Cerebral and cardiac) in young subjects related to the consumption of cannabis are on the rise these past few decades. We will take into consideration the case of a 29-year-old young woman, without any cardiovascular risk factors, admitted to the emergency room with acute ischemia of the right upper limb associated with a stroke following the consumption of cannabis. In the case of our patient, we will discuss the incrimination of the responsibility of cannabis in the occurrence of her clinical presentation in general.

OBSERVATION

Patient aged 29; no significant pathological history; cannabis user for over 15 years taking 7 joints a day. Admitted to the emergency department of the CHU Hassan II in Fez for confusion, dysarthria, and right facial paralysis; in the right upper limb, there is pain and coldness without sensory-motor disorder, dating back to 4 hours before her admission to the emergency room after having lost consciousness without falling, about 45 minutes following a cannabis intake.

- **At admission, the medical exam:** Glasgow score 13; BP: 14/80 cmHg; HR: 80 bpm, apyretic.
- **Reasons:** Confusion; dysarthria; pain and coldness in the right upper limb.
- **On inspection:** right facial paralysis; the pallor of the right hand.
- **Palpation:** pain; limb coldness; abolition of the humeral pulse; radial and cubital.

Biological assessment (Blood count, ionogram, renal function) is without abnormality.

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Normal ECG with no abnormalities.

A CT angiography of the right upper limb showed an occlusion of the radial artery at its distal 1/3 without contrast agent; an occlusion of the cubital artery from its origin with contrast agent in its distal part.

A cerebral TDM scan showed an ischemic stroke consisting of the territory of the right internal carotid, with no sequelae of any old lesions (fig. 1).

Taking the supra-aortic trunks (SAT) in the TDM scan shows arteries with healthy and parallel walls, without any floating thrombi.

No indication of thrombolysis by the neurologists.

The patient underwent an embolectomy with a Fogarty probe of the radial and cubital artery releasing a whitish thrombus (fig. 2). It should be noted that this surgical exploration revealed healthy arteries of small caliber.

The patient was then put on heparin therapy; clinical improvement of the right upper limb (normal color, warmth, presence of distal pulses, no ischemic pain) was obtained immediately postoperative. A complete remission of her facial paralysis and her confusional syndrome within 48 – 72 hours but still had her language disorder.

The cardiological assessment in search of an emboligenic heart disease is normal.

The inflammatory assessment, coagulation, and of thrombophilia are also without abnormality.

Note that there is no clinical or radiological aneurysmal focus at the proximal level.

The main etiology discussed in this patient is cannabis, due to the arterial vasospasm and the various disorders it induces in the physiology of the organism.

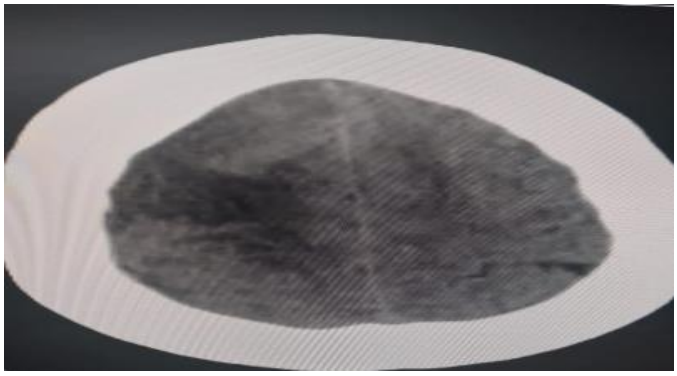

Fig. 1: The cerebral scan showing an ischemic stroke consisting of the territory of the right internal carotid, with no sequelae of old lesions

Fig. 2: Whitish thrombus aspect

DISCUSSION

Cannabis is the most common drug in the world and its consumption is constantly increasing [1]. The most important psychoactive agent isolated in cannabis is Delta-9-tetrahydrocannabinol (delta9THC or THC) [1-6]. The consequences of repeated and long-term use are relatively well known and disseminated: risk of dependence and drug addiction; memory behavioural disorders; decompensation of psychiatric disorders; schizophrenia; COPD; Orthostatic hypotension; high blood pressure, etc [7]. Given the

frequency of its consumption, any pathology occurring particularly in young people should raise the question of its possible responsibility [7]. Thus, cannabis as a vasoactive substance; can induce myocardial or cerebral ischemic phenomena [8].

Several cases of ischemic stroke after the consumption of cannabis in young subjects without any risk factors are described [9]. This is the case of our young twenty-nine-year-old patient without any cardiovascular risk factors who suffered an ischemic stroke associated with ischemia of the right upper limb after the use of cannabis. The particularity in our patient is the association of an array of acute ischemia, something never reported in any literature.

One may be surprised at the low number of observations reporting an indisputable temporal link between the use of cannabis and the occurrence of a stroke [10]. The risk of myocardial infarction is multiplied by 4.8 in the hour following cannabis consumption in angina subjects [11].

A vasospasm was first suspected, following reports of iterative Transient Ischaemic Attacks (TIAs) with the use of cannabis [12] or rapidly improving cerebral ischemia [13].

A cannabis-induced cerebral arterial vasospasm may also be a trigger for stroke in its own right [1]. This vasospasm explains the absence of atheroma risk factors found in these young subjects. This entity is called reversible cerebral vasoconstriction syndrome (RCVS), or even acute reversible cerebral angiopathy (ARCA) [14].

A cardioembolic mechanism has also been proposed, with cannabis being able to cause heart rhythm disorders such as fibrillation or paroxysmal atrial flutter [10, 15, 16]. Another effect of cannabis is the prothrombogenic activity through platelet activation; which can cause thrombosis in healthy arteries [17, 18]. This can allow us to confirm the results of Debois and Cacoub showing in patients who presented a myocardial infarction. An exploration of the coronary arteries was rarely available and was normal in 38% of the cases or showed thrombosis in 38% of the cases [19]. The scan of our patient shows thrombosis of the arteries of the forearm with a whitish appearance of the thrombus and of the small arteries at the time of surgery.

CONCLUSION

This observation reinforces the causal link between the consumption of cannabis and the occurrence of vascular events at all levels (central and peripheral), which is why the search for consumption of cannabis must be systematically sought in any young subject who is a victim of a vascular event regardless of the level affected.

It is time for the general public and the medical world to stop the trivialization of the use of cannabis.

CONFLICT OF INTERESTS

The authors do not declare any conflict of interests.

Contribution of the Authors

All the authors contributed to this article, they approved the final version of this manuscript.

REFERENCES

1. Kras, E., Mrabet, W., & Trouvé, J. (2012). Accident vasculaire cérébral et cannabis: un lien méconnu. *Ann. Fr. Med. Urgence*, 2, 350–353.
2. Beck, F., Richard, J. B., Guignard, R., Le Nézet, O., & Spilka, S. (2015). Levels of drug use in France in 2014.
3. Mittleman, M. A., Lewis, R. A., Maclure, M., Sherwood, J. B., & Muller, J. E. (2001). Triggering myocardial infarction by marijuana. *Circulation*, 103, 2805-9.
4. Bramley-Harker, E. (2001). Sizing the UK market for illicit drugs. Occasional Paper No 74. London: Home Office Research, Development and Statistics Directorate.
5. Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. (2014). Adverse health effects of marijuana use. *New England Journal of Medicine*, *370*(23), 2219-2227.
6. Mallaret, M., Dal'Bo-Rohrer, D., & Demattéis, M. (2005). Adverse effects of marijuana. *La Revue du Praticien*, *55*(1), 41-49.
7. Barbieux, M., Veran, O., & Detante, O. (2012). Accidents vasculaires cérébraux ischémiques du sujet jeune et toxiques. *Rev Med Int*, 33, 35-40.
8. Sidney, S. (2002). Cardiovascular consequences of marijuana use. *J Clin Pharmacol*, 42, 64-70.
9. Wolff, V., Lauer, V., Rouyer, O., Sellal, F., Meyer, N., Raul, J. S., ... & Marescaux, C. (2011). Cannabis use, ischemic stroke, and multifocal intracranial vasoconstriction: a prospective study in 48 consecutive young patients. *Stroke*, *42*(6), 1778-1780.
10. Mittleman, M. A., Lewis, R. A., Maclure, M., Sherwood, J. B., & Muller, J. E. (2001). Triggering myocardial infarction by marijuana. *Circulation*, *103*(23), 2805-2809.
11. Lawson, T. M., & Rees, A. (1996). Stroke and transient ischaemic attacks in association with substance abuse in a young man. *Postgraduate medical journal*, *72*(853), 692-693.
12. Finsterer, J., Christian, P., & Wolfgang, K. (2004). Occipital stroke shortly after cannabis consumption. *Clinical neurology and neurosurgery*, *106*(4), 305-308.
13. Ducros, A., Boukobza, M., Porcher, R., Sarov, M., Valade, D., & Bousser, M. G. (2007). The clinical and radiological spectrum of reversible cerebral

vasoconstriction syndrome. A prospective series of 67 patients. *Brain*, *130*(12), 3091-3101.

14. Frishman, W. H., Del Vecchio, A., Sanal, S., & Ismail, A. (2003). Cardiovascular manifestations of substance abuse: part 2: alcohol, amphetamines, heroin, cannabis, and caffeine. *Heart disease (Hagerstown, Md.)*, *5*(4), 253-271.
15. Kosior, D. A., Filipiak, K. J., Stolarz, P., & Opolski, G. (2000). Paroxysmal atrial fibrillation in a young female patient following marijuana intoxication--a case report of possible association. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research*, *6*(2), 386-389.
16. Kosior, D. A., Filipiak, K. J., Stolarz, P., & Opolski, G. (2001). Paroxysmal atrial fibrillation following marijuana intoxication: a two-case report of possible association. *International journal of cardiology*, *78*(2), 183-184.
17. Caldicott, D. G., Holmes, J., Roberts-Thomson, K. C., & Mahar, L. (2005). Keep off the grass: marijuana use and acute cardiovascular events. *European Journal of Emergency Medicine*, *12*(5), 236-244.
18. Duchene, C., Olindo, S., Chausson, N., Jeannin, S., Cohen-Tenoudji, P., & Smadja, D. (2009). Cannabis-induced cerebral and myocardial infarction in a young woman. *Revue neurologique*, *166*(4), 438-442.
19. Desbois, A. C., & Cacoub, P. (2013). Cannabis-associated arterial disease. *Annals of vascular surgery*, *27*(7), 996-1005.

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