



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

SEVERE SUBDURAL HEMATOMA IN AN ELDERLY PATIENT UNDER TREATMENT WITH ACENOCOUMAROL: A CASE REPORT.

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Manuscript Info

Manuscript History:

Received: 15 July 2015

Final Accepted: 22 August 2015

Published Online: September 2015

Key words:

acenocoumarol, paroxysmal atrial fibrillation, subdural hematoma, craniotomy

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Abstract

Objectives: To describe a case of severe subdural hematoma in an elderly patient treated with acenocoumarol and its surgically management.

Design: Case Report.

Setting: Neurosurgery Clinic, General Hospital Athens “Korgialeneio-Benakeio”, Hellenic Red Cross, Greece.

Patient: An 83 years old female with confusion of sudden onset, following a reported seizure, under medication for paroxysmal atrial fibrillation.

Results: The brain computed tomography (CT) revealed subdural hematoma in the sheath of the left occipitoparietal and the laboratory examination showed an INR 3.48.

Conclusions: The bleeding following acenocoumarol is rare although remains the major complication. In cases that conservative treatment is not successful, surgical intervention is mandatory.

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INTRODUCTION

Coumarins -warfarin and acenocoumarol- are used for the treatment of acquired and congenital, arterial and venous, thrombotic diseases. Coumarins mechanism of action reflect by inhibiting vitamin K epoxide reductase and quinone reductase, and depressing the function of thrombin, prothrombin, and factors VII, IX and X, and proteins C and S. The bleeding following acenocoumarol is rare although remains the major complication. Most cases of hemorrhagic episodes usually require short hospitalization and occasionally transfusion. However, when the conservative treatment isn't successful, surgical intervention remains an option [1]. We present a case of severe subdural hematoma in an elderly patient in treatment of acenocoumarol and its surgically management.

CASE REPORT

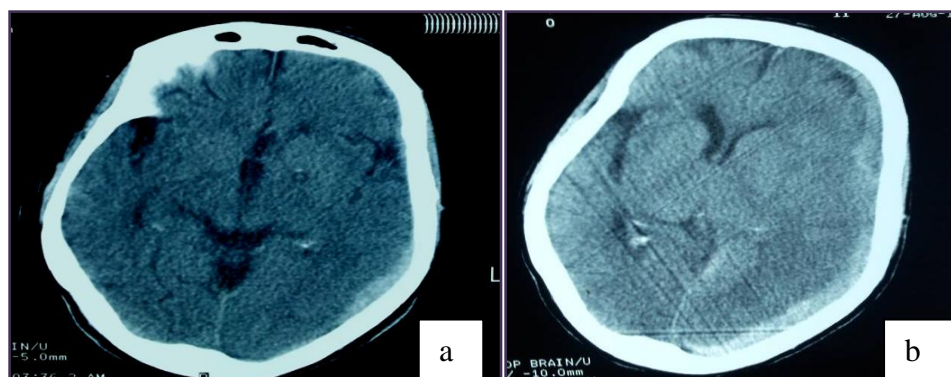
An 83 years old female presented to the emergency department of our hospital with confusion of sudden onset, following a reported seizure. The patient reported a fall from her own height two days ago, which caused head injury. She was hemodynamically stable with an arterial pressure of 140/83 mmHg and a heart rate of 90 beats per minute. Oxygen saturation was 97%. Past medical history revealed cerebral vascular stroke and paroxysmal atrial fibrillation treated for the last 1,5years with acenocoumarol 2 and 4 mg every other day.

Physical examination objectified an anxious female patient with a right cephalhematoma and an ecchymosis on the right eye. The neurological examination indicated no deficit as the patient had normal motility and isocoria. On admission to the Neurosurgery Clinic, laboratory examination showed anemia (hematocrit 31,7% and hemoglobin 10,6 g/dl) with normal white blood cells count (9.7 K/mL) and platelets count (291 K/mL), increased glucose (137 mg/dl), hypokalemia (3,1 mmol/L), severe hyponatremia (106 mmol/L), with normal CPK (82 IU/L), urea 285

mg/dL and slightly decreased creatinine 0,4 mg/dL. Also, abnormalities in hemostasis were present with a PT 34,4" (with the control being 11"), a PTT 76,0" (with the control being 28") and an INR 3.48.

The brain CT demonstrated a small subdural hematoma in the sheath of the left occipitoparietal, ischemic periventricular lesions of medullary substance bilateral, cerebral and cerebellar atrophy (figure 1a). The patient initially was treated conservatively, by discontinuing acenocoumarol, infusing 20 mg of vitamin K intravenously, pause of oral feeding and administration of parenteral fluids in order to correct the severe hyponatremia.

During hospitalization, the patient developed focal seizures with secondary generalization resistant to medication, installed coma and was intubated. The new brain CT demonstrated an augmentation of the subdural hematoma with extension in the sheath of the left parietofrontal, subdural collection in tentorium, edematous hemisphere and shifting right of midline structures (figure 1b). The INR had been partially corrected after initial treatment (INR 1.15) but the hyponatremia persisted (121mmol/L). 30 hours after admission, the patient underwent a left parietofrontal craniotomy and the large hematoma was removed. Postoperatively, the brain CT confirmed the removal of the hematoma with occipital residue and swelling of the left hemisphere, causing mild pressing phenomena. The patient was hemodynamically stable and was transferred to the ICU for further treatment.



(figure 1)

DISCUSSION

Asenocoumarol are used as the treatment of choice for atrial fibrillation, prevention and treatment of venous thromboembolism, heart valve replacement, valvular heart disease and ischemic and non ischemic heart disease [2,3]. The reported frequency of major hemorrhage secondary to acenocoumarol treatment is 2,4-8,1 episodes per 100 patient-years[4]. The most common sheathes of hemorrhage regarding acenocoumarol are gastrointestinal, nasopharynx and central nervous system. The most important risk factors for bleeding in these patients are the deviation of the INR from the target range and the intensity of anticoagulation, with each unit increase in the INR raising the risk of bleeding by 3.5 times [5]. Other causative factors include false anticoagulant administration, comorbid conditions, age over 75 years, dietary habits and interaction with other medications [3]. In addition, polymorphisms of CYP2C9, VKORC1, ABCB1 and CYP4F2 genes affect the dose requirements [6,7,8]. The most major hemorrhagic episodes usually require short hospitalization and occasionally transfusion. The treatment of bleeding is initially the discontinuation of asenocoumarol and administration of fresh frozen plasma or prothrombin complex concentrate along with intravenous vitamin K. Besides, the administration of recombinant factor VIIa seems to be effective. However, increased attention is needed in order to balance the risk of bleeding against the potential risk of thromboembolism [9,10]. Surgical drainage of the hematoma is not recommended as the natural course of bleeding is the spontaneous disappearance of the hematoma. Although, when the patient doesn't respond to supportive treatment surgical intervention shouldn't be delayed. In the present case, despite the intravenous vitamin K administration the patient's clinical condition wasn't improving so a surgical intervention was decided which succeeded to drain the hematoma and control the bleeding [1,5].

CONCLUSIONS

Acenocoumarol reduces the risk of stroke in 65% of patients with atrial fibrillation and increases the risk of intracerebral hemorrhage in 75% of these. INR monitoring and adhering as closely as possible to the recommended therapeutic INR ranges is necessary in order to identify patients at risk of bleeding and to decrease the frequency of over anticoagulation and related hemorrhage [11]. In the present case, the INR value was high regarding the surgeons perspective as there will be excessive bleeding in the surgical field. Furthermore, the INR value was slight

higher than the desired therapeutic range. However, the conservative treatment isn't successful, surgical intervention remains an option and shouldn't be delayed. The reversal of anticoagulation therapy aiming at INR <2,0 increases the risk of vascular thrombosis but also allows surgical treatment of subdural hematoma and therefore it is required prior to surgery. [10,12].

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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