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*Corresponding author

Olutoyin M Lawal, Department of
Internal Medicine, University of Medical
Sciences, Nigeria

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Case Report

Implanon and Pulmonary Embolism- Any Association?

Olutoyin M Lawal*, Sunday S Owolade and Adenike C Enikuomihin

Department of Internal Medicine, University of Medical Sciences, Nigeria

Abstract

Implanon is a single rod contraceptive implant, it is one of the most reliable birth control methods, highly effective with rapid onset of action and an equally rapid return of fertility once removed. Thromboembolic events are established adverse events of hormonal contraceptives; however, few cases of thromboembolic complications of implanon have been reported in the literature. A 39 year old woman, with no known risk factors for thrombus formation and no past history of thromboembolic events presented with difficulty with breathing, cough, hemoptysis, chest pain and an episode of syncopal attack. Further evaluation revealed elevated D dimer, sinus tachycardia on (ECG) and computerized tomography pulmonary angiogram (CTPA) finding of pulmonary embolism. She had implanon inserted for contraception 2 months before the event. Initiation of prompt management with anticoagulant and discontinuation of implanon led to a favourable patient outcome. In conclusion, pulmonary embolism is a possible though uncommon adverse event associated with implanon contraceptive. Therefore, women of reproductive age group requiring contraceptives should be risk stratified with the aim of identifying those with increased risk of this side effect. They should be properly guided and counseled on the appropriate choice of safe and effective contraceptive method. In addition, women on hormonal contraceptive methods (including implanon) presenting with symptoms suggestive of thromboembolic events should be promptly evaluated and treated to avoid high fatality associated with this condition.

Introduction

Pulmonary embolism is the blockage of the pulmonary artery by a blood clot or an embolus; it causes occlusion and limits or prevents blood supply to the lungs resulting in hemodynamic compromise. Pulmonary embolism usually poses a major health challenge as presentation is variable and non specific [1]. Consequently, making the diagnosis is usually challenging and hence resulting in high morbidity and mortality.

Contraception is the intentional prevention of pregnancy due to various devices, sexual practices, chemicals, drugs or surgical procedures. Family planning is essential to ensuring the well-being, safety and development of women and by extension that of families and communities [2]. Therefore, ensuring universal access to family planning methods has been identified as a key role to attaining the sustainable development goals [3,4]. Knowledge of side effects of contraceptives is important to establish realistic expectations and to minimize risks to the patients.

Case Report

Patient is a 39 year old woman who presented on account of progressively worsening difficulty with breathing and chest pain of week duration. She was in her usual state of health until a week prior to presentation when she developed difficulty with breathing, initially on moderate exertion and progressively worsened to dyspnea at rest. There was a positive history of easy fatigability, cough occasionally productive of blood stained sputum, and chest pain. There was no orthopnea or paroxysmal nocturnal dyspnea. Chest pain was described as tightening pressure over the chest, non radiating, gradual in onset and increasingly worsening in intensity, 8/10 at presentation, no aggravating or relieving factor, She gave a history of an episode of syncopal attack which was confirmed by an eye witness, sudden in onset, lasted 1-2 minutes and resolved spontaneously. There was no history of similar complaints in the past, no palpitation, no fever, no calf or leg swelling, and no history suggesting prior cardiopulmonary disorder. No history of recent long distance travel, surgery, or prolonged immobilization. About 2 months prior to presentation, patient had a hormonal contraceptive, implanon inserted. Her last confinement was 2 years before she presented. There was no history of oral contraceptive use, cigarette smoking or alcohol intake. No known family history of malignancy or thrombophilia.

On examination at presentation, she was in mild respiratory distress with flaring of the alae nasi, she was not febrile (temperature was 36.5), not pale, anicteric, not dehydrated, nil calf swelling or pedal edema. Weight 80kg. Height: 1.65m, BMI: 28.39kg / m²

Pulse rate: 110b/minutes, Blood pressure: 90/60mmHg, SpO₂: 88%

Musculoskeletal system: no varicose veins, no calf swelling or tenderness.

Modified Well's Criteria gave a score of 5.5 :(tachycardia: 1.5, hemoptysis: 1.0, alternate diagnosis not likely: 3.0) (Score interpretation: PE unlikely: ≤ 4.0/ PE likely : >4.0)

Revised Geneva score of 7: tachycardia: 5, hemoptysis: 2. (The score relates to probability of PE: 0 – 3: points indicate low probability, 7-10: intermediate probability, ≥ 11: high probability)

Chest x – ray (CXR) done: showed no abnormality,

Electrocardiogram tracing (ECG): showed sinus tachycardia: Probable S1, Q3, T3. (Figure 1).

D- dimer : 5, 247.93 ng /ml(normal <500.0), after 3 months on treatment: 738.32ng/ml (normal < 500ng/ml)/ 601. 47ng/ml after 4 months on treatment.

Full blood count was within normal limits.

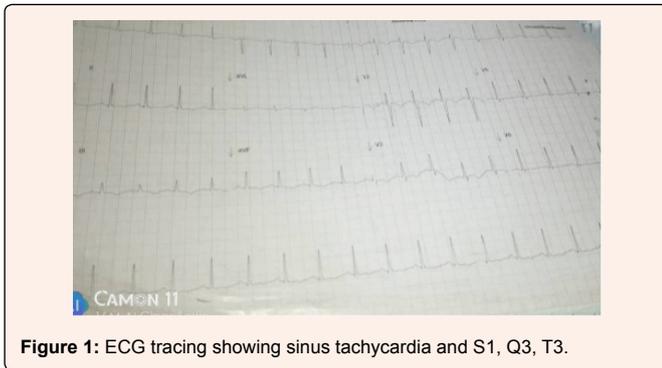


Figure 1: ECG tracing showing sinus tachycardia and S1, Q3, T3.

Echocardiogram: showed enlarged pulmonary trunk with normal cardiac chamber dimension.

Clotting Profile showed prolonged prothrombin time (PT): PT- 24 secs (normal range: 11-16secs) and normal partial thromboplastin time of 25 secs (normal range: 27 - 45 secs).

Doppler Ultrasound of both lower limb: showed normal color filling, compressibility and augmentation response were noted in the deep veins of both lower limbs (femoral, popliteal, anterior and posterior tibial), long and short saphenous veins were normal, no thrombus or feature of stasis noted, no varicose vein seen, soft tissue of both limbs appear normal. Conclusion: Normal venous findings. CTPA showed: an extensive filling defect seen in the right pulmonary artery, saddling the right interlobar and the right pulmonary artery. The thrombus almost completely occluded the whole length of the interlobar artery. Enlargement of the interlobar artery was noted. Similar filling defect was noted on the left, partially occluding the left descending pulmonary artery with associated enlargement of its caliber. Extension into the right superior pulmonary artery was also noted. There was no lung infarction or interstitial changes seen. No pleural effusion noted, the trachea and its bifurcations were normal. The cardiac size was within normal limits, the aorta was not unfolded and the great vessels were preserved. Mild degenerative changes of the thoracic spine were noted. Impression: Extensive saddle acute pulmonary embolism (Figure 1).

She was started on anticoagulant (low molecular weight heparin - enoxaparin) for 10 days and was subsequently maintained on dabigatran (Pradaxa). She also had the contraceptive implanon removed owing to literature documentation of possible though rare link with pulmonary embolism. She continued to make significant clinical improvement; she was discharged home stable on the anticoagulant which she had for a total of 6 months with no sequelae.

Discussion

This case report was written to document pulmonary embolism as an unusual complication of implanon, a hormonal contraceptive and to raise awareness about this possibly fatal side effect. To increase the index of suspicion of health care workers so as to anticipate, promptly investigate and intervene in patients presenting with similar consequence. This knowledge will promote risk stratification of reproductive women requiring contraceptive with the aim of enlightening and counseling women at risk of thromboembolic events on the appropriate choice of effective and safe contraceptive method. This will ensure that patients make informed and well guided decisions that will limit their risks.

64% of married or on in union women of reproductive age globally are on one form of contraception or the other, however, the rate of family planning use is still limited in developing countries and more so in Africa [5]. In spite of the benefits of family planning, 214 million women of reproductive age in developing countries who desire to avoid pregnancy are not on any modern contraceptive method [2]. There are various contraceptive methods [6]. While family planning methods have lots of advantages to maternal, fetal, community, national health and ultimately global health, they are not without disadvantages. Hence family planning methods should be appropriately recommended for women of reproductive age to enhance acceptability and prevent discontinuation of these beneficial methods. Implanon is a relatively new single rod progestin only contraceptive implant [7], it is highly effective [8,9] with rapid onset

of action and prompt return of fertility once it is removed. In spite of the advantages of this novel hormonal contraceptive, some side effects have been associated with its use. Common side effects associated with implanon which have been reported include: Bleeding irregularities, ectopic pregnancies, headache, weight gain, breast pain, ovarian cysts [8-10]. Post marketing surveillance has revealed its association with serious thromboembolic events including some cases of pulmonary emboli [11]. Thromboembolic events have been clearly established as known side effects of hormonal contraceptives containing cyproterone acetate, desogestrel, drospirenone, gestodene [12,13], however not much of implanon's (which contains etonogestrel) association with thromboembolic side effects have been established in studies. Hence this case study, to raise awareness of implanon's association with this lethal side effect.

The patient discussed in the report above, presented with symptoms: chest pain, hemoptysis, easy fatigueability and syncope about 2 months after the insertion of implanon, she has no other known risk factor for thromboembolic phenomenon, however investigations as highlighted above confirmed pulmonary embolism. Patient had the implanon discontinued, was subsequently treated with oral anticoagulants and has remained well.

Conclusion

Pulmonary embolism though rare, is a possible complication of implanon contraceptive. Though studies showing the association between this method of contraception and thromboembolic phenomenon are sparse, this case study is to raise the index of suspicion for possible link between implanon and thromboembolic events. Additional research will be imperative to further ascertain the weight of this relationship.

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