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CASE REPORT

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SEVERE *MITRACARPUS SCABER* JUICE INDUCED FACIAL SKIN DISCOLOURATIONS: A CASE REPORT

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ABSTRACT

This is a case report on a 24-year old dark-skinned lady with incidence of facial skin discolorations secondary to the application of *Mitracarpus scaber* (MS) juice for the purpose of treating an emerging but unclassified facial skin blemishes. Investigations showed that after several failed attempts to treat the blemishes with two known antifungi creams, she was advised by friends to use the MS juice. She macerated some leaves of MS between her palms to obtain its juice and then applied it on her face. Minutes after, she experienced a burning sensation on her face which subsequently resulted in obvious facial discolorations 48 hours later; forcing her to stop the MS juice application. She was then advised by friends to use a combination herbal therapy comprising honey and Aloe vera. The combination therapy proved to be effective as the discolorations disappeared by the 5th day from onset. Although the precise type of skin blemish and the mechanisms associated with the observed skin discoloration were not determined, the bioactive constituents in *Mitracarpus scaber* juice may have played a major role; prompting this reminder that self-medication must be avoided especially the use of herbal medications if their appropriate doses have not been determined.

Key words: Facial Skin, Discoloration, Herbal therapy, *Mitracarpus scaber*, Self-Medication.

INTRODUCTION

The use of medicinal plants for the treatment of ailments is as old as human history and many drugs have been developed either as synthetic or refined components of agents in plants. Irrespective of the successes achieved using technology, the native people across different geographical terrains (especially developing countries) have indeed, continued to use herbs for the treatment of certain ailments, either as a result of poverty or probably due to the efficacy of the herbal products (Cordell and Colvard, 2005).

Available scientific information suggests that the medicinal value of plants lies in some chemical substances that produce a definite physiological action on the human body and the most important of these bioactive constituents are alkaloids, tannins, flavonoids, saponins, glycosides and other phenolic compounds (Rojas et al., 1992). Amongst the myriad of therapeutic plants species, *Mitracarpus scaber* (coded MISCA), is among the species applied in the treatment of various ailments (Okuo et al., 2006; Zirihi et al., 2007). The plant family, *Rubiaceae*, which parades a long list of plants of medicinal importance, has *Mitracarpus scaber* "Zucc" as example (Oliver, 1959; Gill, 1992). The family consists of about 500 genera and 6,000 species distributed all over the world with some of them being tropical trees and shrubs (erect, struggling or twining) while few members are herbs (erect or decumbent) (Evans, 2002).

Specifically, *Mitracarpus scaber* is a perennial annual herb of about 30cm tall or much smaller and possess rough leaves (Olorode, 1984). In Nigeria, it is known as *Obuobwa* in Igbo language, *Gududal* in Hausa language (Hutchinson and Dalziel, 1948) and *Irawo lle* in Yoruba language (Gbile, 1984). It is claimed that *Mitracarpus scaber* possesses antimicrobial activities when crude extracts from the plant are used (Gill, 1992; Benjamin et al., 1986; Irobi and Daramola, 1994). Among the folkloric uses, the juice of the plant is applied topically for the treatment of skin diseases (infectious der-matitis, eczema and scabies) (Dalziel, 1936; Kerharo and Adam, 1974). Some pagan tribes use it as an ingredient in fish poison (Joklik et al., 1984).

Previous studies reported the isolation of pentalogin, from fresh aerial parts of *Mitracarpus scaber*, which demonstrated a potent antifungal activity against *Candida albicans* and *Trichophyllum soudanense* (Moulis et al., 1992). In Senegal, the plant is used for the treatment of sore throat and leprosy in the same way as *Cola cordifolia* (Joklik et al., 1984). In Nigeria also, the juice from the crushed plant is known to be applied topically for the treatment of skin diseases such as ringworm, lice, itching, crawl-crawl and other fungi diseases; or applied to dressings for fresh cuts, wounds and ulcers (Fluck, 1976).

There is evidence also that the plant is an effective antifungal agent with capacity to revitalize areas of hypopigmentation and hyperpigmentation (Van-wyk et al., 1997), while the crushed leaves can be used as dressing for fresh cuts, wounds and ulcers (Gill, 1992). Although several studies have been done on *Mitracarpus scaber*, the studies however, did not assess the side effects (toxic effects) of the juice hence forming the basis for this case report.



Figure 1: *Mitracarpus scaber* plant

CASE PRESENTATION

A 24- year old lady presented with facial skin discoloration secondary to *Mitracarpus scaber* juice application after she observed blemishes on her face. She had initially applied some antifungal creams for the purpose of treating the observed blemishes but to no avail. This prompted her to use *Mitracarpus scaber* juice based on friends' advice. She obtained 3 stems of the plant and macerated the leaves between her palms to obtain the juice and applied same on her face by rubbing.

Minutes after, she experienced burning sensations on her face that subsided after washing her face with water. 24-hours later, she repeated the MS application and the burning sensation reoccurred but did subside even after she had washed her face with water. The intensity of the burning sensation prompted her to stop the *Mitracarpus scaber* juice therapy, but 48-hours later, she observed obvious facial discolorations on her face and this development made her lock herself indoors for days; refusing to seek conventional medical help.

On the alternative, friends recommended a combination therapy comprising Honey and Aloe Vera. This she started 12-hours after observing the discolorations. Interestingly, the combination therapy proved to be effective as the

discolorations disappeared by the 5th day having applied it consecutively for five days from onset. Below are the serial pictures taken during the episode based on informed consent from the subject (see figures 1,2,3,4 and 5).



Figure 2: Anterior view of subject's face with skin discolorations 48hrs after MS application (See black-red arrows)



Figure 3: Anterior view of subject's face with skin discolorations 60hrs after MS application (See white-red arrow)

DISCUSSION

Generally speaking, self-medication has been considered as the use of drugs to treat self-diagnosed disorders or symptoms or the intermittent or continued use of a prescribed drug for chronic or recurrent disease (Bowen et al., 2000; Awad et al., 2005). Self-medication with antibiotics is commonplace in some countries, such as Greece (Skliros et al., 2010). Such use is cited as a potential factor in the incidence of certain antibiotic resistant bacterial infections in places like Nigeria (Sapkota, 2010).

It is apparent that the physiological action of any medicinal plant (like *M. scaber*) may be attributed to the chemical composition of such plant. Pharmacognostic evaluation of the leaves of *M. scaber* carried out by Abere et al. (2007),

revealed the presence of alkaloids, tannins, cardiac glycosides and saponins. These metabolites may be responsible for the various pharmacological effects of *Mitracarpus scaber* since they are known to possess various pharmacological effects.

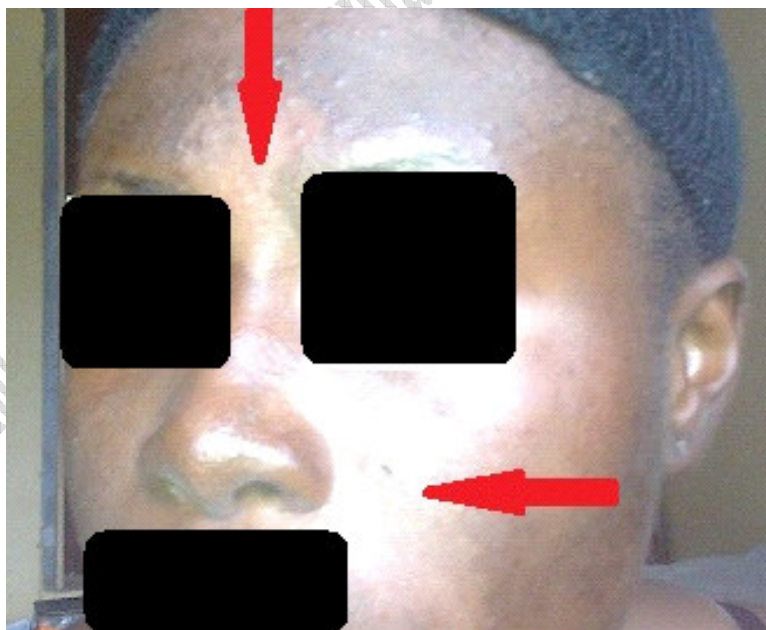


Figure 4: Antero-lateral view of subject's face with skin discolorations 60hrs after MS application (See red arrows)

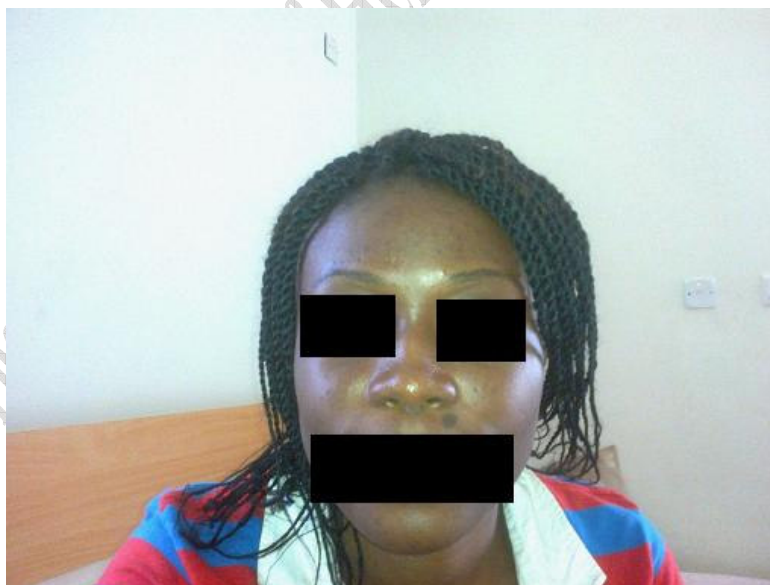


Figure 5: Anterior view of subject's face without make-up showing uniform skin complexion after application of Honey and Aloe Vera combined therapy.

On the other hand, the lack of understanding about the potentials in the active ingredients in herbal therapies/ conventional drugs have led to adverse reactions that are sometimes life threatening or lethal (Elvin-Lewis, 2001). Of course, there is evidence that a number of herbs have capacities to cause adverse effects (Talalay and Talalay, 2001). However, inappropriate herbal formulation might explain the observed rapid onset of facial skin discolorations. In fact, the rampant cases of adulteration, drug-faking, and inappropriate formulation may also

explain the efficacy-failures recorded for the known antifungal creams pointedly used by the subject of this case report.

Many consumers of herbal medicines unfortunately believe that herbal medicines are safe because they are "natural". However, herbal medicines and synthetic drugs can interact, causing toxicity to the patient. Herbal remedies can also be dangerously contaminated, and herbal medicines without established efficacy, may unknowingly be used to replace medicines that do have corroborated efficacy (Ernst, 2007).

Nevertheless, evidence abounds on the efficacy of *Mitracarpus scaber*. According to Gisignano et al. (2000), *Mitracarpus scaber* exhibits both antibacterial and antimycotic activities. The findings from several clinical trials to determine the effectiveness of *Mitracarpus scaber* in humans have formed the bases for the development of *Mitracarpus scaber* pharmaceutical creams (Guede-Guina et al., 1996; Thes et al., 2011). Since these drugs are used to treat self-diagnosed disorders or symptoms, it can be deduced that several negative effects can be caused by these drugs especially when the diagnosis are incorrect. Moreso, inappropriate dosage may pose a threat to the health of the user since these drugs are not prescribed by qualified medical personnel. In Nigeria, many plant agents are being used against infectious diseases due to the relative high cost of conventional antimicrobials (Jennifer and Paul, 2000).

Judging by the fact that the negative effects of drugs can be worsened by self-medication, especially in this era of herbal drug-use, we recommend that relevant authorities populations should conduct relevant toxicity studies on plants with good medicinal prospects (like *Mitracarpus scaber*) in order to achieve standardization. This would go a long way in identifying the true nature of such plants and in the determination of therapeutic doses. Ultimately however, self-medication as well as indiscriminate use of herbal therapies must be avoided.

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AUTHORS' CONTRIBUTIONS

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