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RESEARCH ARTICLE

LIGHTENING DOES STRIKE TWICE IN ONE PLACE!

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ABSTRACT

Adverse events during and after surgery are common. A number of patient, surgical and anaesthetic factors can result in such adverse events. We present the case of a patient who underwent laparoscopy and hysterectomy. Following uneventful surgery, patient developed hypoxia and was not responding to verbal commands. Also her pupils were constricted but her blood pressure was stable. Patient was shifted to I.C.U and after plethora of diagnosis; correct diagnosis of rare pentazocin intoxication was arrived after much deliberation and heartache. Antidote Naloxone was given with dramatic reversion of symptoms. Seven years later, another patient had similar episode after laparoscopic surgery in same hospital. This time being wiser, correct diagnosis of pentazocine intoxication was made and her wellbeing and the wellbeing of the coronaries of the surgeon ! were preserved with the same miracle drug Naloxone. Through this presentation we wish to highlight that though very rare lightening can strike twice and healthy suspicion bearing from knowledge of this entity may help in less panic and smooth management. And also the teamwork of surgeon and anesthetist help in proper diagnosis and hence prevention of morbidity and mortality.

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INTRODUCTION

Approximately 234 million major surgical procedures are undertaken worldwide every year (Weiser, 2008) and about 7 million patients develop major complications that result in 1 million deaths during surgery or hospital stay (Bainbridge, 2012). So adverse events during and after surgery are common. A number of patient, surgical and anaesthetic factors can result in such adverse events. It is important to be aware of such factors so that the teamwork of surgeon and anesthetist can help in proper diagnosis and hence prevention of morbidity and mortality.

Case report 1

We present the case of a 55 yr old female, P2L2 who came to us with the complaints of postmenopausal bleeding. All routine and diagnostic tests including endometrial biopsy were done for the patient and all reports were unremarkable. Patient was then planned and posted for elective total laparoscopic hysterectomy. Surgery was uneventful. Intraoperative blood loss was less than 100 cc and urine output was adequate and clear. Patient was extubated. Soon thereafter it was noticed that her saturation was falling and she still was under deeper sedation.

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On examination, her pulse rate was 110/min, her blood pressure was 100/70 mmhg. Patient was not responding to verbal commands. Her pupils were constricted though still responding to light stimuli. She was intubated again and shifted to the ICU. Patient was seen by the intensivist and physician and a plethora of diagnosis were made from hypoxia during surgery to brain stem herniation etc. But since her clinical picture was consistent with an opiod toxicity, antidote Naloxone was given with dramatic results in recovery of the patient much to the joy of the surgeon. Retrospectively all anaesthetic drugs given to the patient were analysed and it was found that only opiod given to the patient was pentazocine and that too in normal routine doses. It meant that patient had pentazocine intoxication even with normal routine doses which could be due to drug not being metabolized completely/metabolized slowly.

Case report 2

Seven years later, another patient, 42 yr old female, P3l3, with abnormal uterine bleeding with fibroid uterus underwent a laparoscopic hysterectomy after a routine preoperative work up at the same hospital. Intraoperative blood loss was less than 200 cc and urine output was adequate and clear. Surgery was uneventful but patient took a longer time to come out of anaesthesia. After extubation patient was breathing on her own

satisfactorily to maintain saturation. Her pulse rate was 120/min and her blood pressure was 100/60mmhg. Her motor responses were inadequate and pupils were constricted. This time being wiser having had the past experience, correct diagnosis of pentazocine intoxication was made and her wellbeing and the wellbeing of the coronaries of the surgeon were preserved with the same miracle drug Naloxone!. This time patient did not require intubation again or an ICU care, though repeated doses (7 injections of 400mg) naloxone were given and patient recovered well in few hrs and was responding to verbal commands well.

DISCUSSION

Pentazocine, a synthetic narcotic analgesic, is commonly used for the relief of moderate to severe pain secondary to various conditions. It is usually well tolerated; however, adverse effects are not uncommon, especially when higher doses are used and when it is used in a dependent fashion. Pentazocine acts as an agonist of 'κ'receptors and partial agonist/antagonist of 'μ' receptors, and has been widely used to treat mild to severe pain. It has been recognized that pentazocine has an adequate analgesic efficacy with relatively weak ventilatory disturbances (Shook *et al*., 1990 and Hoskin, 1991). This may be due to the fact that opioid receptors differently regulate analgesia and respiration (Bidlack, 2000). Pentazocine is metabolized in the liver and excreted primarily in the urine. The products of the oxidation of the terminal methyl groups and glucuronide conjugates are excreted by the kidney. Elimination of approximately 60% of the total dose occurs within 24 hours. There are a number of factors which influence the likelihood of anaesthesia being produced with opioid like age, pre-existing disease states like hypothyroidism, patient habit like smoking, alcohol. Pharmacodynamic and pharmacokinetic differences underlie this variability of response and medically complicated patients, who may be taking multiple medications and may have inflammation, impaired renal and hepatic function, and impaired immunity (Burt, 1971). Pharmacokinetics contributes to the variability in response to opioids by affecting the bioavailability of a drug, the production of active or inactive metabolites, and their elimination from the body. Pharmacodynamic factors contributing to variability of response to opioids include between-patient differences in specific opioid receptors and between-opioid differences in binding to receptor subtypes. However, the enzymes responsible for glucuronidation reactions may also be subject to a variety of factors that may alter opioid metabolism. The most important UGT enzyme involved in the metabolism of opioids that undergo glucuronidation is UGT2B7. Research suggests that UGT2B7-mediated opioid metabolism may be altered by interactions with other drugs that are either substrates or inhibitors of this enzyme.

Different excipients with which active drugs are formulated can markedly affect the release and absorption of the active ingredient. An instance of severe phenytoin intoxication as a result of a change in excipient has been reported (Tyrer *et al*, 1970). So in the above cases most likely its the pharmacodynamics and pharmacokinetic factors and patient factors like, elderly age, renal disease, drug interactions, enzymatic glucouronidation, hypothyroidism or the different drug excipients have resulted in altered metabolism and excretion of the drug resulting in drug intoxication.

Conclusion

Understanding of absorption and metabolism will lead to a better therapeutic use of pentazocine and a lower incidence of side effects in clinical practice. Pentazocin intoxication and like drugs does exist and must be kept in mind during reversal of patients. Keeping Naloxone handy in the emergency drug trays especially in operating theatres may be a good and life saving idea. Healthy suspicion bearing from the knowledge of this entity again may help in less panic a situation and smooth management!. Through this presentation we wish to highlight that though very rare lightening can strike twice and healthy suspicion bearing from knowledge of this entity may help in less panic and smooth management. And last but not the least its the teamwork of surgeon and anesthetist that helps in proper diagnosis and hence prevention of morbidity and mortality.

REFERENCES

Bainbridge, D, Martin, J, Arango, M, Cheng, D. Perioperative and anaesthetic-related mortality in developed and developing countries: A systematic review and meta-analysis.. *Lancet*. (2012). *380* ;1075–81.

Bidlack, J.M., McLaughlin, J.P., Wentland. M.P. 2000. Partial opioids. Medications for the treatment of pain and drug abuse. Ann NY Acad Sci, 909, pp. 1–11

Burt, B R. A. P. and A. H. Beckett Rit. 1971. Jthe absorption and excretion of pentazocine after administration by different routes. Anaesth., 43, 427.

Hoskin, P.J., Hanks. G.W. 1991. Opioid agonist-antagonist drugs in acute and chronic pain states. Drugs, 41. pp. 326–34

Shook, J.E., Watkins, W.D., Camporesi. E.M. 1990. Differential roles of opioid receptors in respiration, respiratory disease, and opiate-induced respiratory depression. Am Rev Resp Dis, 142, pp. 895–909.

Tyrer, J.H., Eadie, M.J., Sutherland, J.M, Hooper, W.D. 1970. outbreak of anticonvulsant intoxication in an australian city. *Br Med J.*, Oct 31;4(5730):271-3.

Weiser, T.G., Regenbogen, S.E., Thompson, K.D., Haynes, A.B., Lipsitz, S.R., Berry, W.R., Gawande, A.A. 2008. An estimation of the global volume of surgery: A modelling strategy based on available data. *Lancet*. *372* ;139–44.

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