How Do I manage blood donors with Streptococcus bovis bacteremia?

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Case

• Ms D
  • A regular blood donor in Hong Kong
  • In September 2010, at the age of 56, she gave her 31st whole blood donation

• Her blood was processed into red cells, plasma and platelet and tested according to the institutional SOPs
  • Per routine testing, all platelet would be tested on day 2 under the institutional bacterial surveillance program before issue
Case

- A positive signal was detected at 9.3 hours after the culture and *Streptococcus bovis* was confirmed based on subsequent microbiologic investigation.
Case

• Immediately contacted by BTS’s medical staff

• Follow up in a local teaching hospital duly arranged

• Subspecies identification revealed *S. gallolyticus ssp. pasteurianus*
Case

• Her cardiovascular system was unremarkable
• But the colonoscopy performed in December 2010 revealed **early stage of colorectal adenocarcinoma**
• Surgical treatment was given and uneventful
• She remained well afterwards
• Upon the last follow up by the BTS, she informed that
  • repeat colonoscopy was done in April 2011 which showed no abnormal pathology; and
  • her blood CEA level was within normal range
Discussion

• In Hong Kong, the risk of transfusion-transmitted bacterial sepsis has been substantially reduced by a bacterial surveillance program.

• However, new problems emerge as asymptomatic bacteremia is now detected in blood donors.

• One example is *Streptococcus bovis*, a Gram-positive non-enterococcal group D *streptococcus*:
  • shown to be associated with infective endocarditis and colorectal carcinoma which is confirmed in large studies and meta-analysis.
Discussion

• Among persons with symptomatic bacteremia by *S. gallolyticus ssp. gallolyticus*, the risk of colorectal neoplasia was found to be five times higher than sex- and age-matched controls.

• While most of the reported colorectal carcinoma were associated with this subspecies, we have previously reported that bacteremia from
  • either *S. gallolyticus ssp. gallolyticus*; or
  • *S. gallolyticus ssp. pasteurianus*

is closely associated with underlying colorectal pathology.
Discussion

• In this connection, irrespective of the subspecies, detection of *Streptococcus bovis* bacteraemia should warrant a thorough work up for early detection of colorectal adenoma and carcinoma and hopefully improve the clinical outcome.

• Given that missing a diagnosis of asymptomatic colorectal carcinoma is disastrous, we recommend that a high index of suspicion is necessary to look for underlying cause of bacteraemia.
Recommendation

• All *Streptococcus bovis* isolates should be sent to a reference laboratory for full subspeciation by sequencing
• The donors should be duly contacted upon confirmation of the culture results under a standard protocol
• They should be referred for thorough investigations
  • Underlying sepsis and infective endocarditis should be looked for; and
  • in particular, a **complete colonoscopy evaluation is mandatory** irrespective of the result of the subspecies identification
• They should also preferably be given regular contact by the blood service for the long-term outcome
Conclusion

• It is the obligation of the blood service to manage and refer donors for appropriate follow up

• This case on Ms D illustrates the importance of rigorous workup for donors found to have asymptomatic *Streptococcus bovis* bacteremia, as early detection and treatment of colorectal neoplasia may have led to a more favorable clinical outcome
References


