



How Do I

manage blood donors with Streptococcus bovis bacteremia?

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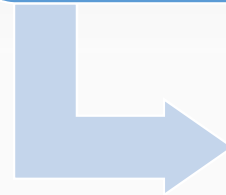
Case

- 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

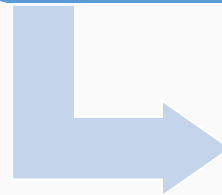


Case

Culture



Positive
signal



*Streptococcus
bovis* was
confirmed

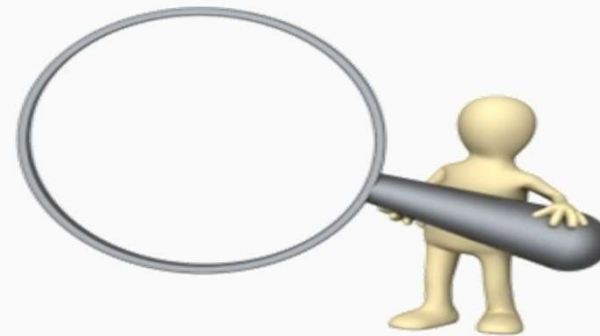


- A positive signal was detected at 9.3 hours after the culture and *Streptococcus bovis* was confirmed based on subsequent microbiologic investigation



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



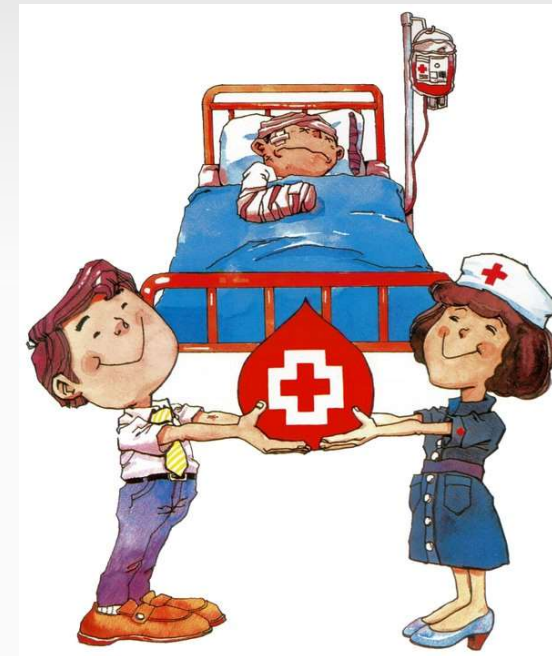
Recommendation

- 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

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